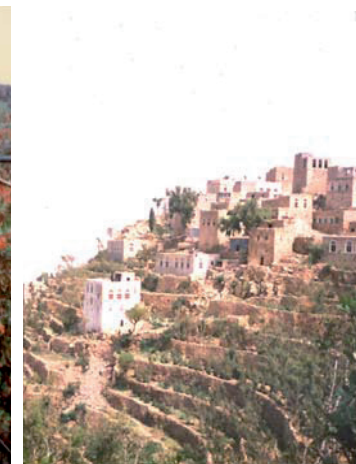
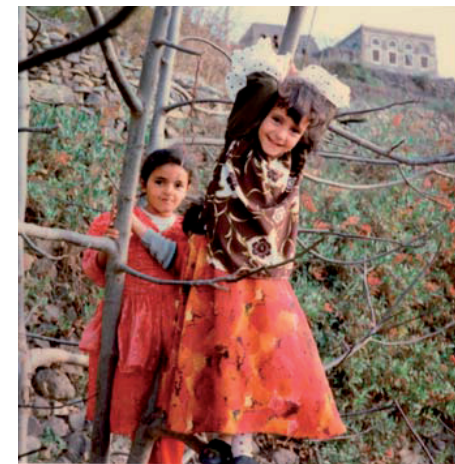


Maternal Mental Health Matters

Childbirth related care in Yemen through women's eyes



Annica Kempe

From the Department of Public Health Sciences
Karolinska Institutet, Stockholm, Sweden

MATERNAL MENTAL HEALTH MATTERS

CHILDBIRTH RELATED CARE IN YEMEN THROUGH WOMEN'S EYES

Annica Kempe



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Maternal Mental Health Matters: Childbirth related care in Yemen seen through women's eyes

THESIS FOR DOCTORAL DEGREE (Ph.D.)

By

Annica Kempe

Principal Supervisor:

Professor Töres Theorell, PhD
Karolinska Institutet
Department of Public Health Sciences
Division of Psychosocial Factors and Health

Opponent:

Senior Research Fellow Robbie Davis-Floyd, PhD
University of Texas at Austin
Department of Anthropology

Co-supervisor:

Professor Kyllike Christensson, PhD
Karolinska Institutet
Department of Women's and Children's Health
Division of Reproductive Health

Examination Board:

Associate Professor David Titelman, PhD
Karolinska Institutet
Department of Learning, Informatics, Management and Ethics
National Centre for Suicide Research and Prevention of Mental Ill-Health

Professor Elisabeth Faxelid, PhD
Karolinska Institutet
Department of Public Health Sciences
Division of Global and Sexual Health

Professor Ulf Högberg, PhD
Uppsala University
Department of Women's and Children's Health
Obstetric and Reproductive Health Research

The public defense of this thesis will take place in Room Wretling, the Widerströmska Building, Tomtebodav 18 A, Karolinska Institutet, Solna

Wednesday, 15th of May, 2019 at 10.15

ABSTRACT

Background: Yemen has a high maternal mortality and a persistent high home birth rate. Though maternal mortality still lies at the heart of maternal health indicators, there is a growing concern about the impact of mental and behavioural health on maternal health outcomes. World Health Organization (WHO) is proposing a stronger focus on mental health for an integrated delivery of services for Maternal- and Child Health (MCH).

Aim: The overall aim is to gain insight into the experience of Yemeni women of modern and traditional care during childbirth, their perceived mental status and health care seeking patterns. The focus of the thesis is on women's reproductive mental health in the context of culture and health care systems.

Methods: A multi-stage (stratified-purposive-random) sampling process was used. Two hundred and twenty women with childbirth experience in five governorates – Aden, Lahej, Hadramout, Taiz and Hodeidah – were interviewed by means of a semi-structured questionnaire. Half of the women lived in urban, half in rural areas. Questions concerned the most recent pregnancy and childbirth (location, attendance and perceived quality); postpartum period; women's empowerment and social and demographic information. A pre-test of the questionnaire was carried out in Taiz. Interviews were made by two Yemeni nurse-midwives and two medical doctors, one of whom was an obstetrician-gynaecologist, and one a Sudanese nurse-midwife. All women approached for an interview were initially explained about the purpose of the study and asked whether they would agree to participate. Interviews lasted for 1-3 hours. All performed interviews were discussed daily among team members.

Results: A large majority of women perceived childbirth as a situation of danger. Fear of death and childbirth complications stemming from previous traumatic childbirth and traumatic experience in the community was rampant. Husbands' and in-laws' disappointment in a girl infant constituted a strong sociocultural component of fear. Women without fear gave reasons of faith, social belonging and trust in either traditional or modern childbirth practice, past positive experience of childbirth and the desire for social status associated with children (I). Women in areas with a matrilineal past who were often unassisted during childbirth experienced little fear (I, II). A graded negative association was found between the perceived authority of the woman in childbirth and the level of biomedical training of staff. Women who had their questions answered and requests met during childbirth had 83% higher probability to perceive their own authority and women who reported skin-to-skin contact/newborn in arms 28% higher probability of not fearing birth (III). Three main themes explained their sense of authority: (i) 'Being at the centre'; (ii) 'A sense of belonging' and (iii) 'Husband's role in childbirth'. Authority was experienced primarily among women within the traditional childbirth sector and among women with a matrilineal past (II, III). Women who had previously been able to follow their own individual choice in matters of childbirth were six times more likely to plan a future childbirth in the same location (IV).

Conclusions: Women's perceived own authority during childbirth is decreasing in the context of Safe Motherhood and the expansion of modern delivery care. This is an important reason why women underutilize professional care. Antenatal care has an important role in reducing fear of childbirth including that of institutional childbirth and in strengthening a couple in welcoming a female infant. Yemeni women's low utilization of modern delivery care should be seen in the context of their low autonomy and status. We call for cooperation between modern and traditional childbirth care. In areas of Yemen with a matrilineal past women's choice of place of delivery does not seem to be influenced by a need for authority during childbirth.

Key words: Maternal mental health, Maternal mortality, Health care seeking, Fear of childbirth, Matrilineal, Sustainable Development Goal 3, Yemen

LIST OF PUBLICATIONS

This doctoral thesis is based in part on the following articles, referred to in the text by their Roman numerals.

- I. **Annica Kempe**, Töres Theorell, Fatoom Noor-Aldin Alwazer, Samera Abdullah Taher and Kyllike Christensson.
Exploring women's fear of childbirth in a high maternal mortality setting on the Arabian Peninsula.
Global Mental Health, Vol. 2 January 2015 e10. Published online:
30 June 2015. Doi: <http://dx.doi.org/10.1017/gmh.2015.6>

- II. **Annica Kempe**, Töres Theorell, Fatoom Noor-Aldin Alwazer, Kyllike Christensson and Annika Johansson.
Yemeni women's perceptions of own authority during childbirth: What does it have to do with achieving the Millennium Development Goals?
Midwifery: Special Issue on the Millennium Development Goals, Vol. 29,
Issue 10, October 2013: 1182-1189

- III. **Annica Kempe**, Fatoom Noor-Aldin Alwazer and Töres Theorell.
Women's authority during childbirth and Safe Motherhood in Yemen.
Sexual & Reproductive Healthcare, Vol. 1, Issue 4, November 2010: 129-134

- IV. **Annica Kempe**, Fatoom Noor-Aldin Alwazer and Töres Theorell.
The role of demand factors in utilization of professional care during childbirth: Perspectives from Yemen.
International Scholarly Research Network (ISRN) Obstetrics and Gynecology,
Vol. 2011, September 2011: 382487. Doi: [10.5402/2011/382487](https://doi.org/10.5402/2011/382487)

CONTENTS

1	BACKGROUND.....	7
1.1	Maternal mental health – the new frontier of reproductive health.....	7
1.2	Risk factors for maternal mental ill-health.....	8
1.3	Consequences for maternal morbidity and mortality.....	10
1.4	Consequences for children.....	10
1.5	Introduction to Yemen.....	10
1.6	Women in Yemen.....	13
1.7	Yemeni women’s reproductive health care seeking.....	14
1.8	Theoretical foundations.....	17
1.9	Three perspectives, “windows of seeing”.....	17
2	AIM AND OBJECTIVES.....	20
2.1	Aim.....	20
2.2	Objectives.....	20
3	METHODS.....	23
3.1	Study site and participants.....	23
3.2	Operational definitions.....	24
3.3	Design of the study.....	25
3.4	Data collection.....	26
3.5	Variables.....	26
3.6	Quality assurance of the data.....	27
3.7	Data analysis.....	27
3.8	Ethical considerations.....	28
3.9	Research for the cover story of the thesis.....	28
4	RESULTS.....	29
4.1	Fear of childbirth in a high maternal mortality setting – a challenge with many faces.....	29
4.2	Women’s authority during childbirth and the role of the community.....	32
4.3	Interaction with staff and women’s perceptions of fulfilment of needs.....	34
4.4	The importance of own choice.....	36
4.5	Additional results.....	37
5	DISCUSSION.....	41
5.1	Women’s authority during childbirth: Maintaining the equilibrium.....	41
5.2	Women in Hadramout.....	49
5.3	Methodological considerations.....	53
5.4	Implications for research, policy and practice.....	55
6	CONCLUSIONS.....	59
7	ACKNOWLEDGMENTS.....	61
8	REFERENCES.....	63
9	APPENDIX.....	73
9.1	Study of the YNDHS 2013: Comparing pre-matrilineal with other study governorates and the rest of Yemen.....	73
9.2	Studies in progress.....	80

LIST OF ABBREVIATIONS

ANC	Antenatal care
CM	Community midwife
CSA	Childhood sexual abuse
EmONC	Emergency obstetric and newborn care
FPHCP	Female primary health care provider
ICM	International Confederation of Midwives
IDI	In-depth interview
IPV	Inter-personal violence
LIC	Low-income country
MCH	Maternal and child health
MD	Medical doctor
MDG	Millennium Development Goal
MMR	Maternal mortality ratios
MoPH&P	Ministry of Public Health & Population
NGO	Non-governmental organization
QoC	Quality of care
PHC	Primary health care
PTSD	Post-traumatic stress syndrome
SBA	Skilled birth attendant
SDG	Sustainable Development Goal
TBA	Traditional birth attendant
TM	Traditional midwife
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
YAR	Yemen Arab Republic
YMA	Yemeni Midwives Association
WHO	World Health Organization

PREFACE

Aspects of women's health in a global context are of great interest to me ever since I was a teenage girl. A scholarship brought me to a global college for my Bachelors degree in social anthropology. The educational philosophy of the college attracted support from the United Nations giving me a close frame for global work for health and welfare. There was a one-year stay in rural Africa included in my training program giving me invaluable experiences of fieldwork.

Back in Sweden I started a long-term relationship with Save the Children. Among other things I worked in the Division of Research & Documentation. A project in Yemen about women's reproductive health was very much at my heart. It was well planned and organized. It involved native interviewers and the possibility to reach rural women. I saw it as a challenge to learn about Yemeni childbirth tradition and acquire a local perspective on some long persisting situations affecting the health of women and children.

At that time I started my training for a Master of Public Health degree. Gradually I realized the potential of the Yemen project for going deeper into theories and models for understanding women's reproductive health. The prerequisites for a research project were obvious to me and I was accepted as a PhD student at Karolinska Institutet. Thanks to Yemeni colleagues in our Swedish-Yemeni multidisciplinary team I found myself in the privileged position of coming in very close proximity to women's lives, their mental health resources and own perceived vulnerabilities. These aspects of existence so clearly influenced reproductive health and wellbeing! And equally clearly were they not visible in any preventive or curative measures to ease the challenges of women's everyday lives.

We have, over the years since the field studies presented here were conducted in the five governorates of Taiz, Hodeidah, Aden, Lahej and Hadramout, done extensive fieldwork in rural/urban Yemen within the scope of several and some still on-going studies. Nevertheless I purposely choose to use four articles stemming from the early field experience in this thesis. Women's perception of own authority during childbirth and the way it has become intertwined with health care seeking, thereby the achievement of Safe Motherhood, the MDGs and the UN Sustainable Goals, is a remaining challenge and one which I believe is going to persist until addressed on women's terms.

As a former student of archaeology in England in the 1980s I had the opportunity to participate in the reconstruction of an Iron Age settlement as a volunteer in the archaeological team of Peter Reynolds at Butser Ancient Farm. I am aware of the lessons that the distant past can teach us and of the interrelatedness of life throughout long stretches of time. I therefore was able to imagine that women in one of our study governorates, Hadramout in the Southeast of Yemen, were still influenced by the situation that a long time ago, this area of Yemen by what seems to be enough evidence today in archaeology/anthropology was a matrilineal and maybe even a matriarchal society.

There is no lack of ideas for further research. Some are already in progress, some surely to come. I sincerely hope that my thesis will inspire other researchers to go deeper into the field of women's global mental health.

1 BACKGROUND

1.1 MATERNAL MENTAL HEALTH – THE NEW FRONTIER OF WOMEN’S REPRODUCTIVE HEALTH

Maternal mortality remains as one of the serious public health issues of our time: A quarter of a million women died while giving life in 2015. A large majority of these maternal deaths occurred in low- and middle-income countries and for every woman who died, some 20 others faced serious or long-lasting consequences (WHO, 2015).

From 1990 to 2015, the global maternal mortality ratio declined by 44 percent – from 385 deaths to 216 deaths per 100,000 live births, according to UN inter-agency estimates. However, this was less than half the 5.5 percent annual rate needed to achieve the three-quarters reduction in maternal mortality targeted for 2015 in Millennium Development Goal 5 (WHO, 2014). Every region has advanced, although levels of maternal mortality remain unacceptably high in sub-Saharan Africa. Almost all maternal deaths can be prevented, as evidenced by the huge disparities found between the richest and poorest countries. The lifetime risk of maternal death in high-income countries is 1 in 3,300, compared to 1 in 41 in low-income countries (UNICEF, 2018).

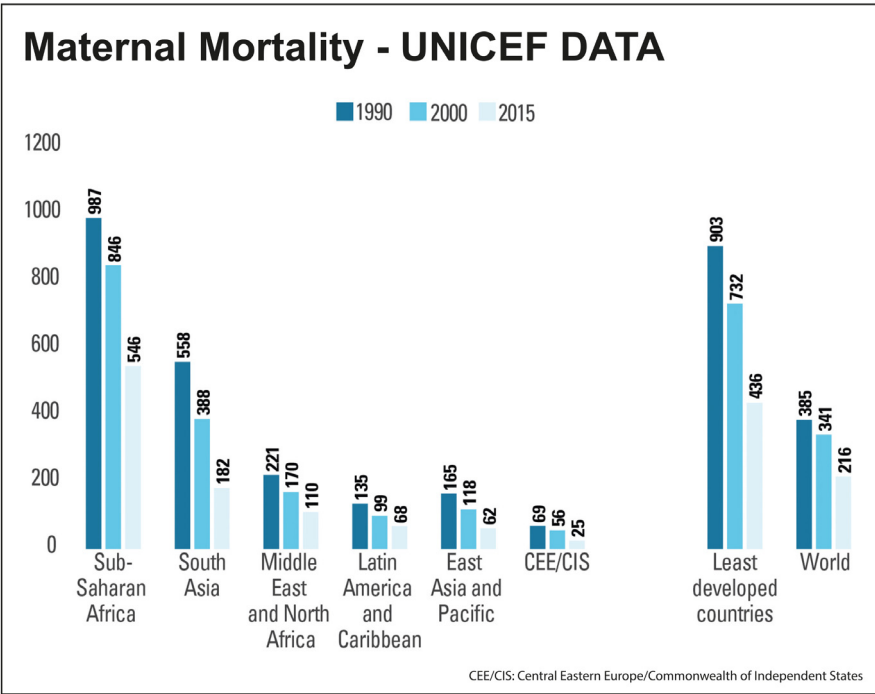


Figure 1: Maternal mortality ratio (maternal deaths per 100,000 live births in women aged 15 to 49), by region, 1990, 2010 and 2015.

Source: WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division (2015). *Trends in Maternal Mortality: 1990 to 2015*. Geneva: WHO.

Though maternal mortality still lies at the heart of maternal health indicators, there is a growing concern about the impact of mental and behavioural health and emotional wellbeing on maternal health outcomes and the growth and development of children (WHO and United Nations Development Programme, UNDP, 2008). WHO (2014) is proposing a stronger focus on mental health for an integrated delivery of services for maternal and child health (MCH). Thus the perinatal mental health of women living in low- and lower-middle-income countries has only recently become the subject of research in part because greater priority has been assigned to preventing pregnancy-related deaths (Fisher *et al.* 2012). The links between mental health problems and maternal health are considered a major cause for concern also as they directly or indirectly increase maternal morbidity and mortality (WHO, 2008).

A systematic review with the objective of summarizing the evidence surrounding the nature, prevalence and determinants of non-psychotic common perinatal mental disorders among women living in low- and lower-middle-income countries was published in 2012 (Fisher *et al.* 2012). An observation of the review was that the settings, recruitment strategies, inclusion and exclusion criteria, representative adequacy of the samples and assessment measures used in the studies varied widely.

A recent systematic review by Gelaye *et al.* (2016) reported an average prevalence of 25 percent for prenatal depression among women in low- and lower-middle-income countries, and an average prevalence of 19 percent for postpartum depression. Prevalence estimates vary widely. Inadequate screening and referral systems often result in women with perinatal mental health issues going undiagnosed and untreated:

Maternal depression, a non-psychotic depressive episode of mild to major severity, is one of the major contributors of pregnancy-related morbidity and mortality. Maternal depression (antepartum or post partum) has been linked to negative health-related behaviours and adverse outcomes, including psychological and developmental disturbances in infants, children, and adolescents (Gelaye *et al.* 2016).

1.2 RISK FACTORS FOR MATERNAL MENTAL ILL-HEALTH

1.2.1 Social determinants

Social determinants are an important cause of mental health problems in pregnant women and mothers. Women living in low-income countries are especially exposed to risk factors, which increase their susceptibility to develop mental health problems. Some of these include poor socioeconomic status, less valued social roles and status, poor nutrition, lack of education, unintended pregnancy and gender-based violence (Prince *et al.* 2007).

1.2.2 Prenatal, perinatal and postnatal factors

One in three to one in five women in low-income countries (compared to about one in ten in high-income countries) have a significant mental health problem during pregnancy and after childbirth (WHO, 2008). High rates of mental health problems in pregnant women and mothers have been reported from many countries in Africa, for example Ethiopia, Nigeria, Senegal, South Africa, Uganda and Zimbabwe (WHO, 2008). Figures are likely to be highly underestimated: rural women in low-income countries do not easily receive a medical diagnosis.

Antenatal fear of childbirth may affect the course and outcome of pregnancy and the experience of childbirth (Ryding *et al.* 1998; Sisto and Halmesmaki 2003; Alehagen, Wijma and Wijma, 2006; Nerum *et al.* 2006; Tsui *et al.* 2006; Kringeland, Daltveit and Moller, 2009; Nieminen, Stephansson and Ryding, 2009; Sercekus and Okumus 2009; Söderquist *et al.* 2009; Adams, Eberhard-Gran and Eskild, 2012; Ayers 2012; Matinnia *et al.* 2014; Stewart *et al.* 2014; Takegata *et al.* 2014). Psychological characteristics of women fearing vaginal birth include susceptibility to anxiety, neuroticism, vulnerability, depression, low self-esteem, dissatisfaction with the partnership and lack of social support (Saisto *et al.* 2001). These characteristics are similar to those describing survivors of childhood abuse (Sachs-Ericson *et al.* 2009).

1.2.3 Childhood and adolescence factors

Childhood abuse affects adult health. A history of early abuse has been linked to severe fear of childbirth among primiparas in Norway (Lukasse *et al.* 2010). A Norwegian clinical study of women referred because of maternal request for caesarean section as a result of fear of birth, showed that 63 percent had been subjected to abuse (Nerum *et al.* 2006). A Swedish study (Areskog, Uddenberg and Kjessler, 1983) among unselected pregnant women found an association between negative experiences of sexuality while growing up and fear of childbirth.

Physical abuse always entails emotional abuse too. A strong association has been found between a history of childhood emotional abuse and fear of childbirth. According to Gibb, Chelminski and Zimmerman (2007), childhood emotional abuse is more likely to contribute to the development of a cognitive vulnerability to depression than either childhood physical or sexual abuse, because with emotional abuse the depressive cognitions are directly supplied to the child by the abuser.

1.2.4 Intra-marital and adult relationship factors

Rates of mental health problems are at least 3 to 5 times higher in women exposed to intimate partner violence (Golding, 1999). Following rape, nearly 1 in 3 women develop post-traumatic stress disorder compared with 1 in 20 non-victims (WHO, 2001). Pre-existing emotional distress often surfaces as depression, substance abuse or attempts at suicide, particularly when combined with a pregnancy that is unwanted.

In a recent study published in Archives of Women's Mental Health, path analysis was used to explore the interrelatedness of abuse and inter-personal violence (IPV) across the lifespan with postnatal stress (Oliveira *et al.* 2017). The link between childhood sexual abuse (CSA) and post-traumatic stress syndrome (PTSD) was mediated by history of trauma, psychiatric history, psychological IPV and fear of childbirth during pregnancy. Physical IPV was directly associated with postnatal PTSD symptoms, whereas psychological IPV connection seemed to be partially mediated by physical abuse and fear of childbirth during pregnancy.

1.2.5 Life course and inter-generational factors

Muzik *et al.* (2016) reported that women with the greatest PTSD symptoms rise during pregnancy were most likely to suffer postpartum depression and reported greatest bonding impairment with their infants at 6 weeks postpartum. Parfitt and Ayers (2009) reported that symptoms of PTSD and depression were significantly correlated with the couples' relationship and parent-baby bond.

1.3 CONSEQUENCES FOR MATERNAL MORBIDITY AND MORTALITY

Mental health problems are often undiagnosed because many of its core features such as fatigue and poor sleep are also often associated with motherhood itself and/or part of the gender stereotype of what to expect when becoming a mother. Pregnant women or mothers with mental health problems often have poor physical health and persistent high-risk behaviours including alcohol and substance abuse. They have an increased risk of obstetric complications and preterm labour (Alder *et al.* 2007). Pregnant women or mothers with mental health problems are more disabled and not as likely to care adequately for their own needs. Neither are they likely to seek and receive antenatal or postnatal care nor follow prescribed health regimens.

Suicide is a leading cause of maternal deaths in developed countries (Oates, 2003). Maternal deaths by suicide have remained unchanged since 2003 and are now the leading cause of direct maternal deaths within a year of childbirth. Suicide is a leading cause of death in young women in the reproductive age group in the world's two most populous countries, India and China (Miranda and Patel, 2005). Mental health problems in mothers can lead to increased maternal mortality, both through indirectly negatively affecting physical health needs as well as well as directly through suicide.

In the present study from Yemen, two main aspects of maternal mental health are focused on in their sociocultural context: Women's perception of own authority during childbirth (or the lack thereof) and women's fear of childbirth (and the lack thereof).

1.4 CONSEQUENCES FOR CHILDREN

The mental health of women not only adversely affects women themselves, but its impact on their developing infant is also severe. If the ability of women to take care of their baby is compromised, the survival and development of the infant is at risk. Maternal depression in resource-constrained settings is linked directly to lower infant birth weight, higher rates of malnutrition and stunting, higher rates of diarrhoeal disease, infectious illness and hospital admission and reduced completion of recommended schedules of immunization in children. It also adversely affects physical, cognitive, social, behavioural and emotional development of children (WHO, 2008).

1.5 INTRODUCTION TO YEMEN

Yemen is the poorest country in the Middle East and North Africa (MENA) region. The gross domestic product (GDP) per capita was estimated to be US\$ 1, 343 in 2013 (CSO, Statistical Yearbook, 2013). According to the first Population Census conducted in 1994, the population was about 16 million. It has increased by 58 percent in the last 20 years to reach about 25 million in 2013 (CSO, Statistical Yearbook, 2013).

Geography

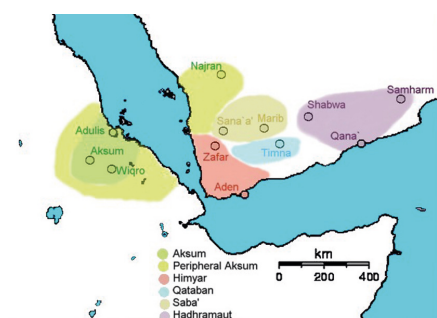
The Republic of Yemen is located in the southern part of the Arabian Peninsula between 12° and 20° north latitude and 41° and 54° east longitude. The total area, excluding A1-Rub Al-Khali desert, covers 555,000 square kilometres. The boundaries of the Republic of Yemen are the Kingdom of Saudi Arabia in the north, the Arabian Sea and Gulf of Aden in the south, the

Sultanate of Oman in the east, and the Red Sea in the west. There are 112 Yemeni islands in the Red Sea and Arabian Sea. The largest island is Socatra, which covers an area of 3650 square kilometres. Yemen is divided into five regions: The mountain area, hill area, coastal area, Al-Rub Al-Khali area and the Yemeni islands (Yemen National Health Demographic Survey, YNHDS, 1991-92).

History

In ancient times, geographical location and favourable natural conditions played an important role in population settlement and the development of civilizations in the territory now occupied by the Republic of Yemen. This was especially true regarding the valleys toward the Al-Rub Al-Khali desert in the east, the Arabian Sea in the south, and the Red Sea in the west. The eras of Mae'en Hadramout and Saba'a (Sheba) are considered to be the first organized political entities in Yemen before the birth of Christ. The Hemyar era flourished later and ended with the Ethiopian invasion in 525 A.D. (YNHS, 1991-92).

Map of Aksum and South Arabia ca. 230 AD.



Kingdom of Hadhramaut (violet) in the 3rd century CE. Attribution: By Yom at the English language Wikipedia.

The history of the Sabeans, as far as known, and the topography of their country are derived from South-Arabian inscriptions, which began to be discovered about the middle of the last century, and from coins dating from about 150 B.C. to 150 A.D. The native monuments are scattered over the period extending from before that time and up to the 6th century A.D., when the Sabeian state came to an end; Saba was the name of the nation of which Ma'areb was the capital (Wikipedia, 2017). Russian anthropologist Andrey Korotayev (1995) reported decisive evidence for the existence of distinctly matrilineal autonomous corporate lineages in Southern Arabia in the third century A.D., contained in a well-known Sabaic inscription (FA 76) from the Sabeian capital Ma'areb.

In almost all respects women appear to have been considered the equals of men, and to have held the same civil, religious and even military functions. Polygamy does not seem to have been practiced. The high position occupied by women among the Sabeans is reflected in the story of the Queen of Sheba and Solomon. The story of Bilqīs, as the Queen of Sheba is known in Islamic tradition, appears in the Qur'an, though she is not mentioned by name, and her story has been embellished by Muslim commentators. The Arabs have also given Bilqīs a southern Arabian genealogy, and she is the subject of a widespread cycle of legends.

According to one account, Solomon, having heard from a 'hoopoe' (a bird) that Bilqīs and her kingdom worshipped the Sun, sent a letter asking her to worship God (Wikipedia, 2017).

The most important activities were agriculture and trade. Agricultural terracing on the mountains was invented and dams were established, the most famous of which was the Ma'areb dam. Caravans transported commodities from India and East Africa across the Arabian Peninsula to areas around the Mediterranean Sea (Al-Zoabi, 1990). Yemeni Civilization flourished in those years, and Yemen was called Arabia Felix (Arabia the "happy") by the Greeks. By the end of the Hamiarite era, however, Yemen was dominated first by the Ethiopians and then by the Persians. This lasted until the emergence of Islam, when the Yemenis embraced the Islamic religion and Yemen became part of the central Islamic state. This period lasted from 628 A.D. until 824 A.D. Thereafter, small independent states emerged, leaving Yemen weak and divided. The Turks occupied Yemen from the sixteenth century until the beginning of the seventeenth century, while the British occupied Aden in 1839. The Turks invaded the northern part of Yemen again in 1872, and continued their occupation until the outbreak of World War II, when Yemen came under the rule of the Hameed Al-Deen family in the north. This rule lasted until the revolution on the 26th of September 1962. The British remained in the south until the outbreak of the 14 October Revolution, which resulted in independence on the 30th of November 1967 (Mustafa, 1984). With the success of the two revolutions, Yemen entered a new era of economic, social, cultural, and political change. The latest of these changes was the unification of the two parts of Yemen (north and south) on 22 May 1990 (YNHDS, 1991-92).

1.5.1 Yemen in the United Nations Human Development reports

Yemen is ranked low in the United Nations Development Programme (UNDP) indexes (Human Development Report, 2016).

Human Development Index (HDI): Yemen rank: 168/188 in 2015.

The Inequality-adjusted Human Development Index (IHDI) contains two related measures of inequality – the IHDI and the loss in HDI due to inequality. The IHDI looks beyond the average achievements of a country in longevity, education and income to show how these achievements are distributed among its residents. An IHDI value can be interpreted as the level of human development when inequality is accounted for.

Yemen value 2015: 0.320. At the country level, losses due to inequality range from 5.4% in Norway to 33.7% in Yemen.

Gender Inequality Index (GII): The latest GII rank for Yemen was 159 in 2015.

The Gender Inequality Index presents a composite measure of gender inequality using three dimensions: reproductive health, empowerment and the labour market. Reproductive health is measured by two indicators: the maternal mortality ratio and the adolescent birth rate. Empowerment is measured by the share of parliamentary seats held by women and the shares of population with at least some secondary education by gender. And labour market is measured by participation in the labour force by gender. A low GII value indicates low inequality between women and men, and vice-versa.

Yemen value 2015: 0.767. The Arab States, together with Sub-Saharan Africa and South Asia, suffer the largest losses due to gender inequality.

1.6 WOMEN IN YEMEN

For the latest Yemen National Demographic Health Survey (YNDHS) 2013 about 25,000 women age 15-49 were interviewed: 16,656 ever-married women and 8,778 never-married women. Some of the key findings of this survey, which also makes retrospective comparisons, show that:

- Forty-two percent of all women age 15-49 have no education, and 21 percent have attended secondary school.
- Just over half of all women are literate.
- Only 10 percent of ever-married women age 15-49 are currently employed.

Marriage

- Most women in Yemen are married by the time they reach age 18.
- There is now a trend towards later marriage for women.
- Polygyny is not common in Yemen; only 6 percent of currently married women say their husbands have other wives

Fertility

- The total fertility rate for Yemen is 4.4 children per woman, a large decrease since 1997, when the rate was 6.5 children per woman.
- Fertility among urban women (3.2 children per woman) is markedly lower than among rural women (5.1 children per woman).
- Births in Yemen are closely spaced; 30 percent occur within 24 months after a previous birth.
- The median age at first birth among women age 15-49 is 20.8.
- Eleven percent of girls age 15-19 has either given birth or are pregnant with their first child.

Fertility preferences & Family planning

- Ever-married women report that the ideal number of children is 4.3.
- One in seven births in Yemen (14 percent) were reported by the mother to have been unwanted at the time of conception, and 21 percent were mistimed (wanted later).
- Knowledge about contraception is nearly universal in Yemen: 98 percent of married women have heard of at least one method.
- The contraceptive prevalence rate has increased to 34 percent among married women; in 1997, this rate was only 21 percent.

Early childhood and maternal mortality

- The under-5 mortality rate in Yemen is 53 deaths per 1,000 live births. This means that about 1 in 19 children dies before age 5.
- The infant mortality rate is 43 deaths per 1,000 live births.
- There has been a remarkable decline in childhood mortality rates over the past three decades. The under-5 mortality rate decreased from 150 deaths per 1,000 live births in about 1985 to 53 deaths per 1,000 live births in about 2011.
- Under-5 mortality is twice as high for births to women with no education as for women with higher education.
- The maternal mortality ratio measured in the survey is 148 maternal deaths per 100,000 births.

1.7 YEMENI WOMEN'S REPRODUCTIVE HEALTH CARE SEEKING BEHAVIOUR: DOES IT CHANGE ACROSS TIME?

1.7.1 Location of childbirth

1991/92: "Home is better"

According to the YNHDS 1991-92, women's view that "home is better," was the Number One reason women gave for not having delivery in a health facility, for all background characteristics. The preference for birthing at home was the reason stated in more than half of births in urban areas (54 percent) and in the southern and eastern governorates (58 percent); it was also cited for one-third of births in rural areas and in the northern and western governorates (34 percent).

2013: "Home is better"

In 2013 only 30 percent of births occurred in health facilities (this figure is higher than that recorded in the Yemen Demographic Maternal and Child Health Survey (YDMCHS, 2006): 24 percent). Almost two in ten births take place in public health facilities and just over one in ten takes place in private health facilities.

A majority of women (62 percent) said they did not deliver at a health facility because it was better to give birth at home. One-quarter of women reported *cost* as a factor in their decision to deliver at home, while another one-quarter said that the delivery service was *too far away* (24 percent). Nine percent of women said that *poor treatment by health providers* was a reason for their deciding about childbirth at home, and another 9 percent said they had *emergency labour* and presumably could not get to the health facility in time. Differences by age of the mother at the time of birth are generally small.

Place of delivery by parity, ANC, urban/ rural residence, mother's education and household wealth, 2013

First births are much more likely to take place in health facilities than higher order births (45 percent and 20-30 percent, respectively). There is a strong relationship between attending antenatal care and place of delivery. Only 15 percent of births to women who received no antenatal care services took place in a health facility compared with 59 percent of live births to women who received four or more antenatal care visits.

Place of delivery differs greatly by residence; 49 percent of births in urban areas were delivered in a health facility compared with 23 percent of births in rural areas. There is a strong correlation between a mother's education and place of delivery, and between household wealth and place of delivery. Births to mothers with higher education are much more likely to take place in a health facility than births to mothers with no education (65 percent compared with 21 percent). Likewise, births to women in the highest wealth quintile are more than four times as likely to take place in a health facility as births to women in the lowest wealth quintile (57 percent and 13 percent, respectively).

1.7.2 Assistance during childbirth

Yemen National Health Demographic Survey 1991-92

In the 1991-92 survey (YNHDS, 1991-92), the level of assistance by a health professional was only 16 percent. Traditional birth attendants provided assistance at delivery for another

one-fifth (21 percent) of births, and relatives or friends assisted at more than half (52 percent) of births. Five percent of births were delivered without assistance.

Yemen National Demographic Health Survey 2013

According to the most recent Yemen National Demographic Health Survey (YNDHS, 2013) 45% percent of births in the five years preceding the survey were delivered by a skilled provider, with 26 percent of the deliveries assisted by a doctor, 18 percent by a nurse or midwife, and 2 percent by an auxiliary nurse/ midwife. Twelve percent of births were assisted by a traditional birth attendant or a grandmother, and 41 percent by relatives or friends.

Overall, the percentage of live births delivered by a skilled provider observed in the 2013 YNDHS (45 percent) represents an increase from the figure (36 percent) reported in the YDMCHS 2006. Doctors (15 percent) or trained nurse/midwives (7 percent) assisted in about one-fifth (22 percent) of births in the five-year period preceding the 2006 survey.

Assistance during childbirth by urban/rural residence, mother's education and household wealth, 2013

In urban areas, 73 percent of births were assisted by a skilled provider compared with 34 percent in rural areas. By governorate, more than eight in ten deliveries in Aden Governorate (84 percent) were assisted by a skilled provider compared with only 13 percent of births in Reimah Governorate (YNDHS 2013).

There is a steady increase in the proportion of births with skilled attendance at delivery as mother's education levels increase from only 31 percent of births to women with no education to 89 percent of births to women with higher education. Wealth quintile is strongly associated with type of assistance at delivery. Births to women in the highest wealth quintile were more likely to get assistance at delivery from a skilled provider (81 percent) compared with births to women in the lowest wealth quintile (19 percent) (YNDHS 2013).

1.7.3 Comments on the classification of TBAs in the YNDHS

Assistance during childbirth

Thirty-seven percent of all women in the PhD study were attended by a traditional birth attendant (TBA), 32 percent by an untrained TBA and 5 percent by the formally trained (Results: Table 2).

The definition of a traditional birth attendant in our study is wider than that used in the YNDHS.

In our study – along with the large majority of the TBAs who underwent a traditional training together with an older TBA – the 'TBA untrained' group also includes women who assist sporadically at deliveries with little training. It is likely that these women assisting childbirth have been included in the YNDHS group of 'relatives and friends'. In her 1991 study of the traditional midwife in the Dhamar Governorate of Yemen, Lidwien Scheepers defines:

There are women who merely incidentally assist at a delivery, women who only assist at the deliveries of their own daughters or daughters-in-law and women who mainly give assistance both at the deliveries of neighbouring women unrelated to them, and to related women living further away. Thus it looks as if assistance at deliveries is provided from within the network of neighbours and related women.

1.7.4 Women's reproductive health care seeking behaviour in Sana'a 2010

"Home Delivery is Better"

Recognizing the limited data still in existence to explain women's reproductive health seeking behaviour in Yemen a cross-sectional study concerning reproductive services utilization in Yemen's capital Sana'a was conducted in 2010 (Basaleem, 2012). The aim of the study was to investigate the socio-demographic and services factors associated with reproductive health seeking behaviour and to explore respondents' perception with regards to services' utilization, accessibility and quality. The study involved probability sampling of 1678 women in four districts of the capital. For the explorative part eleven focus groups were conducted with men and women respectively. The questionnaire addressed reproductive history and antenatal, childbirth and postnatal care.

Results showed the mean age at marriage to be 17.6 years. Almost all women had professional antenatal care (97 percent). Home delivery was reported by half of the respondents. Eighty percent did not receive postnatal care. Family planning was encountered among 60 percent. The major reason for not using family planning was the husband's refusal.

The most frequently mentioned reason for home delivery was "home delivery is better" (60 percent). Assistance during home delivery was provided in the first place by mothers/mothers-in-law (29 percent) followed by relative/friend (24 percent) whereas nurses/midwives and physicians attended 20 percent and 16 percent of deliveries respectively. 47 percent of the respondents themselves made the decision for the delivery place.

The opinion that home delivery is better was elaborated by 48 percent who also said that they would deliver at home in the future. Such preference was mostly related to their belief that home delivery has more privacy (53 percent). Close to 50 percent of those preferring home delivery said that they would ask relatives/friends to assist them. Feelings of security, the possibility of family accompaniment and low cost were other reasons for a home delivery. Women expressed: "There is no need for hospital delivery. We hear that nurses bite women in the labour room!"

Both women and men voiced the idea that the distance from the health facility carries less influence on its utilization due to the availability of transportation in the city of Sana'a. The *quality* of health services is the most important determinant. Some husbands expressed that as women become more and more educated, they have a better chance to access any health facility, even a remote one. Some men had the idea that a woman cannot attend remotely located health facilities unless her husband accompanies her.

In the study sample, 47 percent of deliveries occurred at home, a rate that is lower than the national figure of 77 percent. The responses in the qualitative study show that nearly half of the women and all men had a preference for health facility delivery.

Only 45 percent expressed their willingness to have skilled birth attendants in the future. Although that percentage is higher than the encountered figure for skilled attended deliveries (36 percent), it is far below the recommendations of having all childbirths attended by skilled birth attendants. The qualitative study showed clear gender-based views with regards to decision making, with more males favouring reproductive health decisions in the hands of husbands compared to women who believed that the husband and wife should jointly make such decisions.

The Basaleem 2012 study concluded that:

In Yemen, inappropriate reproductive health seeking behaviour coupled with perceived low services quality and cultural barriers are contributing factors to inadequate services utilization and high maternal deaths. Women's reproductive health-seeking behaviour appears far from optimum particularly in childbirth and postnatal care.

1.8 THEORETICAL FOUNDATIONS

Theoretical foundations for the study subject of this thesis are derived from the fields of anthropology, public health and psychosocial medicine. Culture is considered a central concept in anthropology, encompassing the range of phenomena that are transmitted through social learning in human societies. **Cultural relativism** is a key concept in social anthropology and builds on the idea that a person's beliefs, values, and practices should be understood based on that person's own culture, rather than be judged against the criteria of another.

Brigitte Jordan was a German-American professor described as the midwife to the "Anthropology of Birth" (Davis-Floyd and Sargent, 1997). Her work has inspired a range of responses within the field of reproductive anthropology that integrated her approaches to examinations of the social, cultural and biological implications of birth around the world.

Jordan noted:

Within any particular social situation a multitude of ways of knowing exist, but some carry more weight than others. Some kinds of knowledge are discredited and devalued, while others become socially sanctioned, even official, and are accepted as grounds for legitimate inference and action.

From within the field of psychosocial medicine, the thesis draws on some key concepts:

Social capital is described by Kawachi *et al.* (1997, 2004 and 2014) as "the features of social organization, such as civic participation, norms of reciprocity, and trust in others, that facilitate cooperation for mutual benefit." Social capital is a community-level variable, the individual-level counterpart of which is measured by a person's **social networks**. Since social networks are associated with health at the individual level, it is plausible that social capital could be associated with health at the community level (Pearce and Smith, 2003). **Social support** is provided from the structure of network ties and can take many different forms, i.e. emotional, instrumental, appraisal and informational support (Berkman and Krishna, 2014).

1.9 THREE PERSPECTIVES, "WINDOWS OF SEEING"

1.9.1 Through women's eyes

To listen to women and gain their understanding of local perspectives has been strongly emphasized in advancing matters for maternal health globally:

The point is not that global strategies, evidence-based guidelines, or high-level monitoring and accountability initiatives are inherently wrong or unnecessary. But when they consume most of the oxygen in the room, drowning out voices

and signals coming from the ground, they distort both understanding and action (Freedman, 2016).

Even though the aspiration has been to include women in their own health care (Koblinsky *et al.* 2016) through making women's voices heard not as an afterthought but as a starting point (Kinney *et al.* 2016), studies conducted from the local perspectives of women have not been taken into account sufficiently to be able to influence maternal and child health global policies (Freedman, 2016). A view from the ground would show that women interact with maternal health services for more reasons than health outcomes. The need to be 'in control' or 'the authority' during childbirth means to women to be treated with dignity and respect (Tuncalp *et al.* 2015; WHO, 2016; Bohren *et al.* 2014 and 2015; Asefa and Bekele 2015; Raven *et al.* 2015) and to have a voice in choices made during the course of childbirth (Downe *et al.* 2016; Mumtaz *et al.* 2013; Dako-Gyeke *et al.* 2013; Kaphle, Hancock and Newman, 2013).

It is important to gain knowledge of factors and obstacles that influence women and their thoughts, emotions and wellbeing during pregnancy and childbirth. Such knowledge could help staff to better interact with women clients and thus increase the proportion of births attended by skilled birth attendants (Kempe *et al.* 2015).

1.9.2 A window of the sociocultural context of women's mental health

The systematic review by Fisher *et al.* (2012) investigating prevalence and determinants of perinatal mental disorders in women in low- and lower-middle-income countries could confirm that women's views and perceptions of their mental health and health priorities have been comparatively little researched. For women themselves, mental health is critically important. One study reported that women's interest in mental health concerns actually outweighed their interest in reproductive health. In their study of women in the Volta region of Ghana, West Africa Avotri and Walters (1999) found that psychosocial problems related to a heavy burden of work and a high level of worry predominated over reproductive health concerns. Women attributed much of their psychosocial distress to financial insecurity, financial and emotional responsibility for children, heavy workloads and a strict gender-based division of labour that put a disproportionately large burden on them.

Women's mental ill health during the perinatal period in low- and lower-middle-income countries, as indicated by the data in the above systematic review, result from multiple factors and lack a direct causal pathway. Edwards *et al.* (2006) demonstrated that symptoms were more severe among women who had a greater number of risk factors and Patel, Rodrigues and DeSouza (2002) found that many risk factors interact, especially in culturally determined ways. In Africa, studies using a broad approach to antenatal stressors found pregnancy in general to be a time of vulnerability and fear (Hanlon *et al.* 2009 and 2010; Dako-Gyeke *et al.* 2013; Stewart *et al.* 2014; Sawyer, Ayers and Smith, 2010).

Results showed that the risks for mental ill-health are likely to vary by cultural context and that in the study settings, women's mental health is governed to a large degree by social factors, of which many are beyond women's individual control. Arguments have been put forth that in resource-constrained countries, women are protected from experiencing perinatal mental problems through the influence of social and traditional cultural practices during pregnancy and in the postpartum period (Fisher *et al.* 2012; Stern and Kruckman, 1983; Howard, 1993).

1.9.3 Window of time

I examine the results of my study through the window of elapsed time in relation to the present. I conducted the interviews for this study during the early 1990s. The study by Basaleem (2012) of women's reproductive health care seeking behaviour in Yemen's capital Sana'a was described above. The results of this study comparatively showed that women's reasoning concerning choice of location of delivery had remained much the same since the time of our study from the 1990s. Lack of change must be seen against the background of the situation that Sana'a City is the most affluent location in Yemen, the place where women have the easiest access to institutional childbirth care and the place where most women have received an education (YNDHS, 2013). However, there are some changes in type of assistance chosen by women during delivery.

Background data for place of delivery and assistance during delivery are presented from two time periods: the period around the early 1990s (YNHDS 1991-92) and the period of around 2013 (YNDHS 2013).

The second way of looking at results of our study through the window of time is with a much longer time frame in mind. This way involves the status of women as it has evolved historically in different parts of the Arabian Peninsula and how culture in its historical context may influence women's mental health and health care seeking during pregnancy and childbirth.

2 AIM AND OBJECTIVES

2.1 AIM

This research project about childbirth in Yemen aims to convey local women's perspectives in matters pertaining to the UN Sustainable Development Goals, of which Goal 3 aims to ensure healthy lives and promote well-being for all at all ages. The overall aim is to gain insight into the experience of Yemeni women of modern and traditional care during childbirth, their perceived mental status and health care seeking patterns. The focus of the thesis is on women's reproductive mental health in the context of culture and health care systems.

2.2 OBJECTIVES

1. To explore women's fear of childbirth in a high maternal mortality setting (Article I);
2. To explore women's preferences with regard to location and attendance during childbirth from a cultural and gender perspective, with a focus on women's perceptions of their own authority during childbirth (Article II);
3. To examine what constitutes women's perceived authority during childbirth, with specific reference to the associations of perceived authority to the intra-partum factors, the level of training of staff and the socio-demographic background of women (Article III);
4. To examine the influence of socio-demographic, delivery outcome, and demand factors on women's preferred location of childbirth in case of a future pregnancy, seen against the background of previous childbirths (Article IV).

Table 1: The summary of studies showing domains, research questions, methods and main findings

Domains	Research questions	Studies/ Methods/ Data collection	Papers	Main findings
Childbirth tradition Pregnancy	What individual and contextual factors impact Yemeni women's fear of childbirth? What factors protect against fear of childbirth?	Study I (Qualitative) open-ended question in semi-structured questionnaire	Paper I	Women concurred that fear was related to their experience of childbirth as a place of danger; to the perception of living in tension 'between worlds' of tradition and modernity; and to the prospect of giving birth to a girl infant. Lack of fear was found among women born and raised in a region of Yemen with a different childbirth tradition.
Psychological stress Coping Childbirth	What does 'own authority' during childbirth imply for Yemeni women?	Study II (Qualitative) open-ended question in semi-structured questionnaire	Paper II Paper III	Women's authority at birth was perceived by women as being able to follow through on own wants; belonging and support among women in the community; and the opportunity for authority with the husband.
Staff attending childbirth Childbirth practices	What are the associations of perceived authority to the intrapartum factors and the level of training of staff?	Study IV (Quantitative) cross-sectional study with 220 face-to-face interviews with a semi-structured questionnaire	Paper III	Women who had their questions answered and requests met and who reported skin-to-skin contact/ newborn in arms had a higher probability to perceive own authority during childbirth. A graded negative association was found with the level of biomedical training of staff.
Women's autonomy and social status	Does the social and demographic background of women play a part in how they experienced and evaluated the ability to exercise and maintain own authority at birth?			Social and demographic factors played no role for women's perceived own authority at birth. A matrilineal history of one region was a decisive factor.
Women's health care seeking Prospective childbirth	What socioeconomic, delivery outcome and 'demand factors' influence women's preference of same or different location of childbirth in case of a future pregnancy?	Study IV (Quantitative) cross-sectional study with 220 face-to-face interviews with a semi-structured questionnaire	Paper IV	Women's own individual choice of birth attendance/ location of childbirth and the presence of a birth support person increased preference of same location; birth complications decreased such choice.



"I beg you, as you leave, to have a look at my little cabin not only once, but twice. When a person looks a second time, it is not with the eye of a stranger, it is a look with the heart"

From the speech of Svetlana Alexievich, 2015 year's Laureate of the Nobel Prize in Literature, at the Nobel Banquet in Stockholm, December 10, 2015

The full quotation reads: "In one Belarusian village, an old woman bade me farewell with the following words: 'Soon we will go our separate ways. Thank you for listening to me and for conveying my pain to other people. I beg you, as you leave, to have a look at my little cabin not only once, but twice. When a person looks a second time, it is not with the eye of a stranger, it is a look with the heart ...'



Fatoom Al Ibrahim,
Traditional Midwife of Mechshab, Aameca

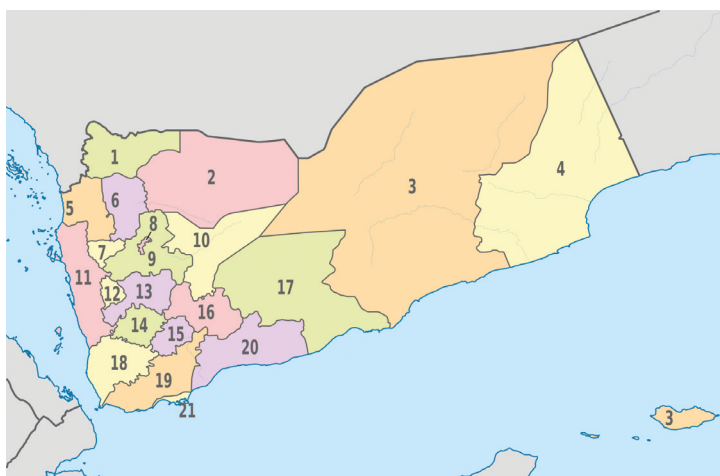
3 METHODS

3.1 STUDY SITE AND PARTICIPANTS

The four studies presented in this PhD thesis constitute sub-studies of a comprehensive study in Yemen, conducted with the purpose of elucidating factors responsible for women's choice of modern or traditional childbirth care in the catchment areas of the *Save the Children* collaborative Maternal and Child Health (MCH) program.

Study participants included 220 rural and urban women with childbirth experience, between 14 and 50+ years old, of an approximately normal age distribution (some uncertainty remains related to the age of individual women, as women themselves were not certain).

Participants were selected in five of Yemen's governorates: Hodeidah Governorate and Taiz Governorate in the north; Aden Governorate, Lahej Governorate and Hadramout Governorate in the south (Map of Yemen and its' Governorates).



Map of Yemen and its governorates

- | | | | |
|-----|--------------------------------|-----|----------------------|
| 1. | Saada | 12. | Raymah |
| 2. | Al Jawf | 13. | Dhamar |
| 3. | <i>Hadhramaut*</i> | 14. | Ibb |
| 4. | Al Mahrah | 15. | Dhale |
| 5. | Hajjah | 16. | Al Bayda |
| 6. | 'Amran | 17. | Shabwah |
| 7. | Al Mahwit | 18. | <i>Taiz*</i> |
| 8. | Amanat Al Asimah (Sana'a City) | 19. | <i>Lahij*</i> |
| 9. | Sana'a | 20. | Abyan |
| 10. | Ma'rib | 21. | <i>Aden*</i> |
| 11. | <i>Al Hudaydah*</i> | 22. | Socotra Island |

*Governorates where field-studies were conducted. Map by courtesy of Wikimedia Commons (governorates in Arabic spelling).

3.2 OPERATIONAL DEFINITIONS

The definitions of key concepts are presented below:

Maternal death or maternal mortality is defined by the WHO as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes" (WHO, 2018).

Mental health: Mental health includes "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO, 2014).

Maternal mental health: WHO defines maternal mental health as "a state of well-being in which a mother realizes her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to her community" (Herman and Swartz, 2007). Mental health is not the same as the absence of mental illness, but reflects a capacity to adapt and cope. The most common mental disorder, the "common cold" of the mental health field, is depression, and the evidence for a link with child outcomes is stronger than for other mental disorders (Rahman *et al.* 2008).

Skilled childbirth care: Skilled care at birth is defined as care provided by a health worker with midwifery skills, also called a skilled attendant. Skilled attendants are accredited health professionals such as midwives, doctors, and nurses who have been educated and trained to proficiency in managing normal (uncomplicated) pregnancies, childbirth, and the immediate postnatal period and can identify, manage, and refer complications in women and newborns (WHO, 2018).

There is a 2018 joint statement by the WHO, the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), the International Confederation of Midwives (ICM), the International Council of Nurses (ICN), the International Federation of Gynecology and Obstetrics (FIGO) and the International Pediatric Association (IPA) of skilled health personnel providing care during childbirth (WHO, 2018).

Traditional Birth Attendant (TBA)/Traditional Midwife (TM): A traditional birth attendant (TBA), also known as a traditional midwife (TM), community midwife or lay midwife, is a pregnancy and childbirth care provider. Traditional birth attendants provide the majority of primary maternity care in many developing countries, and may function within specific communities in developed countries.

Traditional midwives provide basic health care, support and advice during and after pregnancy and childbirth, based primarily on experience and knowledge acquired informally through the traditions and practices of the communities where they originated (WHO, 2010). TBAs may not receive formal education and training in health care provision, and there are no specific professional requisites such as certification or licensure. A traditional birth attendant may have been formally educated and has chosen to not register.

They often learn their trade through apprenticeship or are self-taught; in many communities one of the criteria for being accepted as a TBA by clients is experience as a mother. Many traditional midwives are also herbalists, or other traditional healers. They may or may not be integrated in the formal health care system. They sometimes serve as a bridge between the community and the formal health system, and may accompany women to health facilities for delivery (Wikipedia, 2019).

Many anthropologists today agree (see for example Davis-Floyd, 2018) that the term Traditional Midwife is really a more appropriate term to describe the long informal training of most of these care-providers and their important roles in their communities.

In this thesis, I will use the term Traditional Midwife in my own texts. When referring, summarizing or quoting texts the term will be identical to the original used.

Respectful Maternity Care (RMC). Provision of respectful maternity care is in accordance with a human rights-based approach to reducing maternal morbidity and mortality.

WHO (2018): "Respectful maternity care – which refers to care organized for and provided to all women in a manner that maintains their dignity, privacy and confidentiality, ensures freedom from harm and mistreatment, and enables informed choice and continuous support during labour and childbirth – is recommended."

Matrilineality: The tracing of kinship through the female line. It may also correlate with a social system in which each person is identified with their 'matriline' – their mother's lineage –which can involve the inheritance of property and/or titles. A matriline is a line of descent from a female ancestor to a descendant (of either sex) in which the individuals in all intervening generations are mothers – in other words, a "mother line".

This matrilineal descent pattern is in contrast to the more common pattern of patrilineal descent from which a family name is usually derived (Wikipedia, 2019).

3.3 DESIGN OF THE STUDY

A multistage (stratified-purposive-random) sampling process was chosen. The first stage in this process was to select two strata in each of the five target districts: one urban – the strata of the location of the Save the Children clinic – and one rural.

The total population of women with childbirth experience in the 11 districts in Yemen where Save the Children had been involved in collaborative MCH projects was defined as the frame of the study. The study was designed by MD Frants Staugaard, Professor of International Health. Five districts were sampled with the ambition of representing the widest possible range of geographical, cultural, ethnic and infrastructural characteristics.

The five target districts were: Aden, Lahej, Seyoon, Taiz and Zabid.

A multistage (stratified-purposive-random) sampling process was chosen. The first stage in this process was to select two strata in each of the five target districts: one urban – the strata of the location of the Save the Children clinic – and one rural.

The second stage in the sampling process was to purposely select (a.) an area in the immediate vicinity (up to 1/2 hour walking distance) from the local Save the Children-supported MCH clinic and (b.) an area at a distance of at least two hours' walking from the same clinic.

The result of this sampling was the selection of part of the urban and rural catchment areas respectively of the following MCH Clinics: Al Hauta (Lahej Governorate), Dar Saad (Aden City and Aden Governorate), Tarim (Hadramout Governorate), Zabid (Hodeidah Governorate) and Taiz (Taiz Governorate).

The third stage in the sampling process was a random selection of households for the interviews with women with childbirth experience. The households were defined as situated within the above ten clusters (i.e. five urban and five rural).

A quota of 22 interviews was allocated to each of the clusters. Thus the target number of interviews totalled 220. The quota in each target cluster was filled through the following procedure: The first household was randomly selected in the field situation by one of the four interviewers as the most centrally situated in the cluster and additional households selected at an interval, ranging from five to ten. The interval was calculated by all members in the team on the basis of an assessment of the total number of households in the target divided by the quota figure.

The immediate target group for interviews was defined as the female head of each identified household.

The rationale behind the use of this multistage sampling procedure was the ambition to collect data from a total sample of women with childbirth experience which could be seen as indicative of attitudes and behaviours of the total population of women with childbirth experience in the 11 districts with Save the Children supported MCH clinics.

A wide range of geographical, cultural, ethnic and infrastructural characteristics is represented in the study sample. Although likely according to Yemeni team members, an assumption cannot be made that the clusters selected for this study would allow conclusions to be made regarding the population of women with childbirth experience in Yemen as a whole.

3.4 DATA COLLECTION

The individual women with childbirth experience sampled for the study were interviewed by a structured, closed- and open-ended questionnaire. The questionnaire was developed in a first version by the principal investigator (author of this thesis). A multidisciplinary team responsible for the field study comprised two Yemeni nurse-midwives (Fatoom Noor-Aldin Alwazer and Feroza Hamed Shamsuddin), two medical doctors (OB/GYN Zeinab Joobar Dhman and paediatrician Sarwat Al-Attas) and one Sudanese nurse-midwife (Fatma Salih Khider). All team members had long experience of mother-and-child-health-related work in rural/ urban Yemen, which also included the training of midwives and other care providers. Based on in-depth explorations of themes with team members, a few consecutive versions were then developed. Pre-testing of the questionnaire took place with ten women in rural/urban Taiz. The final version of the questionnaire was translated into Arabic.

3.5 VARIABLES

We divided the questionnaire into five broad categories of questions and issues:

- a. Information related to the various phases of the most recent and previous pregnancies, including health care seeking behaviour of the individual respondent, knowledge, attitudes and practices.
- b. Questions related to the most recent childbirth, its location, professional attendance (if any), perceived quality and the preferences of women regarding future choice of childbirth alternative.

- c. Information regarding the early postnatal period regarding maternal-child bonding and breastfeeding, and to the late postnatal period and family planning.
- d. Questions related to women's empowerment.
- e. Demographic and social information regarding the respondent and her household.

3.6 QUALITY ASSURANCE OF THE DATA

Special measures were taken by the team to ensure trustworthiness of the data. Comprehensive and detailed discussion took place between team members in relation to the formation of each question in the questionnaire. Team members' long experience of attending women during childbirth was tapped in the group to make questions as precise and meaningful to women's experienced reality as possible.

Interviews proceeded at the pace set by each individual woman and care was taken to respect the situation that Yemeni women, particularly rural women, have very busy days involving a multitude of chores and duties from early morning until late at night. Interviewing was thus sometimes interrupted for cooking, gathering a flock of sheep from a nearby mountain or hanging wash to dry on the roof. Interviews would last for up to three hours. Some of the women's husbands or older female relatives would sometimes sit and listen during the initial phase of the interview, which would inhibit women to speak freely. It was decided that in such cases interviewers had to return a second time to secure privacy of the interviewed woman.

All performed interviews were discussed on the same evening among team members. Through this working routine, which was kept throughout the study, the team established a sense of joint ownership and responsibility for the research, which later during arising difficulties in the field (due to needing additional permits or to extreme weather conditions) served to sustain our commitment to the research.

During the process of analysis, in-depth discussion took place between the principal investigator (the author of this thesis) and one member of the Yemeni team who visited Stockholm and the Karolinska Institutet on several occasions.

3.7 DATA ANALYSIS

We analysed the quantitative findings through the statistical program StatView SE Graphics and JMP, using chi-square test and multiple logistic regression method. The chi-square test was used to examine whether or not a hypothesized explanatory factor was significantly differently distributed in relation to a dependent variable. The multiple logistic regression was used in order to test whether the explanatory variables identified by the chi-square test were *independently of one another* statistically significantly related to the dependent variable.

The qualitative findings have been analysed through the use of content analysis through the following procedures:

- Answers were categorized first according to urban and rural women, representative of the population in the urban and rural strata selected in each of the five target districts. Answers in the urban group were first analysed, followed by answers in the rural group.

- After repeated readings of all answers to each question, main themes emerged in the text. I identified categories of answers under each theme according to the many varied answers identified, and selected quotes that typified most women's responses.

3.8 ETHICAL CONSIDERATIONS

All women approached for an interview received oral explanations about the purpose of the study and verbal consent regarding participation was given by each woman. An important aspiration of the team was to make sure to present the aim of the research to each individual woman in such a way that she would be able to feel part of the dedication of team members in making heard the voices of Yemeni women vis-à-vis health policy planners. To this end, a promise was made to interviewed women that the team would make every effort to have individual experiences count in the strife for a satisfactory future delivery of MCH care in Yemen.

Ethics Committees of the Karolinska Institutet and the Ministry of Public Health & Population (MoPH&P) in Sana'a provided ethical clearance for the study. Close communication was maintained with the MoPH&P throughout the field study and beyond in order to facilitate the potential application of findings in planning and programming of MCH in Yemen.

3.9 RESEARCH FOR THE COVER STORY OF THE THESIS

3.9.1 Historical research in Yemen

Findings in the study showed differences in mental health outcomes during pregnancy and childbirth between women in the Hadramout Governorate and women in the other four study governorates. I attempted to clarify these differences and further research gradually revealed a different socio-cultural context and its historical background (Korotayev, 1995). Personal communication with peer researchers, research of historical websites and contacts with anthropologists, archaeologists and writers were some avenues of searching for information.

3.9.2 Study of the Yemen National Demographic Health Survey 2013

With the ambition to further explore how daily life of women and their families today differ between matrilineal Hadramout and the other governorates of the present study I selected specific indicators in the YNDHS 2013 for further study.

4 RESULTS

4.1 FEAR OF CHILDBIRTH IN A HIGH MATERNAL MORTALITY SETTING – A CHALLENGE WITH MANY FACES

"Childbirth is the sister of death"

The aim of the Article I study was to explore women's fears of childbirth in a high maternal mortality setting. This qualitative article deals directly with the theme of fear of childbirth (as well as its counterpart, non-fear of childbirth), while fear of childbirth constitutes an important background to the findings presented in Article II and Article III, which both deal with strategies of resilience developed by women at the community level in the context of high risk during childbirth.

Overall findings of Article I

The overriding finding of the study was that fear of childbirth is an intrinsic part of daily life among most women in the study governorates except in one governorate – Hadramout. Consequently, a large majority (close to three quarters) of women in the study had experienced fear of childbirth.

An additional overriding finding of this study was that fear of childbirth has a strong cultural component. Women in Hadramout, one of the five study governorates (constituting one fifth of the study population) where a different childbirth tradition has evolved over time (see below) for the most part expressed that they had not experienced fear of childbirth.

The existence or non-existence of fear of childbirth was found to reflect values and traditions in the broader social and cultural realm in the study governorates. Women's fear thus took on many different expressions in a large variety of situations.

Fear and lack of fear were reported from childbirth experience both in the traditional and modern childbirth sector in the study governorates.

4.1.1 Multiple spheres of childbirth fear

The personal realm and the role of the past

The experience of pregnancy and childbirth had left its mark on women, who often had a long history of losing children to miscarriages, stillbirths and neonatal deaths. Almost 20 percent of all pregnancies had been lost either before or after birth and the deaths had substantially impacted the mental and emotional wellbeing of women and young girls. As a result, childbirth was perceived as a situation of danger.

Because of a bad history I'm afraid. The first baby was stillborn, the second a caesarean operation, also the third baby was a caesarean operation. (25 year-old urban woman with 2 living children and 3 pregnancies)

The ill fate of family members reinforced women's fear during pregnancy. A 34-year-old urban woman pregnant for the 6th time and with 2 living children explained: "My mother died when she was carrying a baby."

The inter-generational realm and women's communication with the unborn

During pregnancy women's thoughts were preoccupied with the gender identity of the infant.

*I was thinking all the time about having a baby girl again, and I felt all the time sad.
(27-year old rural woman with 4 living children)*

The marital realm

Women gave evidence of living in tension between tradition and modernity, worlds that sometimes collided in the intimate sphere of family. The widespread practice of early marriage had compromised girls' education, with close to three quarters of women in the study population being illiterate. Less than 20 percent of women had completed a primary and less than ten percent a middle or secondary school education. Considerably fewer of the women's husbands were illiterate and 16 percent of the husbands had a higher education. As a consequence, husbands often lived in a different world from their wives – a world where knowledge about medical risk makes fear of childbirth commonplace.

A 14 year-old pregnant girl and mother of one living in town with her older and educated husband described how inequality in marriage gave rise to her every-day fear of the upcoming birth:

I was afraid this time very much because of my husband. He was very afraid, and whenever I saw him leave the house, I thought something might happen to me.

The realm of the community

In the local community, hearsay concerning women's reproductive trauma gave rise to rumours, which circulated widely among women. Neighbours and friends recalled events at home or in the hospital, evoking and escalating fear of childbirth:

My sister-in-law is only 14 years old. Her husband took her to the hospital and they opened her abdomen. She was alone in the labour room. I hope I will never be. (36 year-old woman with 6 living children and 10 pregnancies)

The sociocultural realm: "society"

The wider sociocultural context provided the large majority of women with fertile ground for fear of childbirth in that it gave rise to anxiety about motherhood. Women described how becoming a mother had become a constant source of stress in marriage and how their thoughts during pregnancy were dominated by a need for a male baby:

*I touch my abdomen and talk to myself like a madwoman, and I say: please be a boy, so that your father will be happy and I will be called a mother of boys.
(27-year-old rural woman with 8 living children and 11 pregnancies)*

I married at the age of 12 and after nine years I became pregnant. If there were children to buy, I would have given all my gold to have one, male or female. I experienced a lot of problems for children. My husband married

three times and divorced each co-wife after two years. I thank merciful God that I'm now living happily with children. (39-year old urban woman with 8 living children and 10 pregnancies)

The maternal and child health care services

Fear vis-à-vis the maternal- and child health care services including among trained staff attending childbirth was strong in most of the study governorates. Fear of the hospital, of institutional staff and childbirth practices were different yet overlapping themes of fear. For most women, to remain in the familiar family sphere during childbirth was a priority. Generally, women expressed feelings of anxiety to be in the hands of staff they experienced as only remotely present with them during childbirth:

I'm afraid of the severe pain and the new people and the new place. (27 year-old rural woman with 4 pregnancies)

This was the first time I gave birth without my mother's presence, I felt lonely. (36-year-old urban woman with 7 living children and 10 pregnancies)

4.1.2 Women who lack fear of childbirth

A large minority (close to a third) of women in the study population reported that they had not been afraid of childbirth.

Women in one of the study governorates, the Hadramout Governorate bordering Oman and Saudi Arabia in southeast Yemen, mostly expressed a contrasting outlook on childbirth, which by tradition is unassisted.

God gave me the courage to perform the delivery by myself. (Rural woman of unknown age with 7 living children and 9 pregnancies)

In their statements, nomad women in particular underscored that their lack of fear was a natural consequence of trusting in the power of God in life in all spheres of life and of their conviction that girls and boys are equal:

All are children of God. (18 year-old nomad woman with 5 living children and 6 pregnancies)

I leave my life to God and I don't know the word afraid at all. And why should I be afraid of God? I didn't make him angry. (26 year-old nomad woman with 6 pregnancies)

Women without fear of childbirth in the other four study governorates gave explanations relating to the status that children brought them and to childbirth being in the hands of a higher power. Familiarity with staff during institutional childbirth helped alleviate fear mostly among socially privileged women and in the traditional childbirth sector, traditional midwives and other birth attendants reduced childbirth fear through their trusted support during childbirth at home.

4.2 WOMEN'S AUTHORITY DURING CHILDBIRTH AND THE ROLE OF THE COMMUNITY

No woman can say no because she herself needs someone to help her. (30 year-old woman with a youngest child at 3 and 7 pregnancies)

Overall findings of Article II

The aim of the study was to explore women's preferences with regard to location and attendance during childbirth from a cultural and gender perspective, with a focus on women's perceptions of their own authority (versus non-authority) during childbirth.

The overriding finding of Article II was that the tradition of maintaining own authority during childbirth has developed among women in the community as a way of collective coping in the context of high risk. Thus, fear of childbirth lay at the heart of women's own developed strategies for survival.

On an individual level to maintain authority during childbirth had become a way of strengthening perceptions of self-worth:

This is the only time I feel I'm an important person, cared for and well looked after. (23-year-old woman with a youngest child at 2 and 2 pregnancies)

Whether women were able to execute own authority during childbirth or not was found to reflect values and traditions in the broader social and cultural realm in the study governorates.

Experience of own authority was mostly reported from childbirth experience in the traditional childbirth sector, while a general complaint among women giving birth in institutions in most of the study governorates was the loss of own authority. Women with experience of institutional childbirth frequently reported being denied the support they needed to feel safe during childbirth and feelings of separation from staff.

The midwife decides, I felt as if I was under her authority to be alive or dead. (21 year-old woman with a youngest child at one and 3 pregnancies)

4.2.1 Staff attending childbirth

Childbirth among the 220 women took place at home, in a clinic/health unit or a hospital. Five categories of staff working in the traditional and/ or modern childbirth sector assisted women during childbirth (Table 2).

Table 2: Attendance and location of the most recent childbirth among women in the study population (n: 220)

Type of midwife/ birth attendant*	Home	Clinic	Hospital	Totals (%)
No one	30	0	0	30 (14 %)
TBA (traditionally trained)	71	0	0	71 (32 %)
TBA (formally trained)	7	3	0	10 (5 %)
PHC Facilitator	27	0	0	27 (12 %)
Community Midwife	5	2	9	16 (7 %)
Registered Nurse Midwife	11	9	9	29 (13 %)
Medical Doctor	1	0	36	37 (17 %)
	151 (69 %)	14 (6 %)	55 (25 %)	220(100%)

*Five categories of staff assist women at deliveries:

- Traditional Birth Attendants (TBAs) undergo traditional apprenticeship training with an older TBA. Five hundred TBAs have received a formal training of one to eight weeks at the local Health Centre or Health Sub Centre.
- Primary Health Care Facilitators (PHCF) are selected from villages and trained in the local Health Centre for one year. Their formal educational background varies from two to four years. Female PHCFs are particularly trained in MCH/FP.
- Community Midwives (CMs)/Senior Community Midwives (SCMs) have eight years of elementary school and a two-year course to graduate as CM from the Central Institute of Health (CIH). Following several years of practical work, selected CMs may go back to CIH for an additional one-year midwifery course and qualify as SCMs.
- Registered Nurse-Midwives (RNM) have twelve years of formal education plus three years additional education in the CIH, focusing on nursing, followed by work in a hospital. A second period of one year in the CIH adds a postgraduate course in midwifery to their training.
- Medical Doctors (MD) have completed five years of medical school.

4.2.2 Authority: Empowerment, support and collective coping

For those women who were attended during childbirth, to be ‘in authority’ meant sharing decision power with the midwife/care provider. Just as important, women described how in a multitude of ways to maintain authority as a group filled the function of strengthening bonds between all women. Lastly, to execute authority during childbirth was seen as a means to securing attention from the husband, who in spite of not being in close proximity to childbirth nevertheless was perceived as a key person.

4.2.3 ‘Own Authority’ inherent in culture

Women’s perception of own authority during childbirth was found to have a strong cultural component. In the Hadramout Governorate with a different childbirth tradition, women almost exclusively expressed that they had been the authority during childbirth.

Especially at birth I feel more strong, and I do what I want. (39 year-old nomad woman with a youngest child at 1 and 14 pregnancies)

4.3 INTERACTION WITH STAFF AND WOMEN’S PERCEPTIONS OF FULFILLMENT OF NEEDS

The main aim of this study was to investigate the concept of ‘own authority’ during childbirth using a quantitative approach. Specifically, associations of women’s perceived authority were studied with the intrapartum factors and the level of training of staff as well as with a range of social and demographic factors.

Overall findings of Article III

The overriding finding of Article III was that the issue of good communication between women and staff during the course of childbirth was the most important determinant for whether women perceived own authority.

In multiple logistic regression analysis, the issue of women’s communication with staff, addressed in the interview situation with women as “Were your questions answered and your requests met during childbirth?” constituted one of two variables showing an independent statistical association with women’s perceived authority. Women who reported having had their questions answered and requests met during childbirth had an 83% higher possibility of belonging to the ‘authority’ group than the other women (95% CI 1.66 – 2.02).

There was a graded negative association between women’s perceived quality of communication with staff during childbirth and the level of biomedical training of staff.

An additional overriding finding was that ‘authority’ extended to women’s caring for the newborn. The women who reported skin-to-skin contact/newborn in arms had a 28% higher possibility of belonging to the authority group than women on average in the population (95% CI 1.03 – 1.59). There was a graded negative association between women’s perceived own authority and their distance from the newborn (Figure 2).

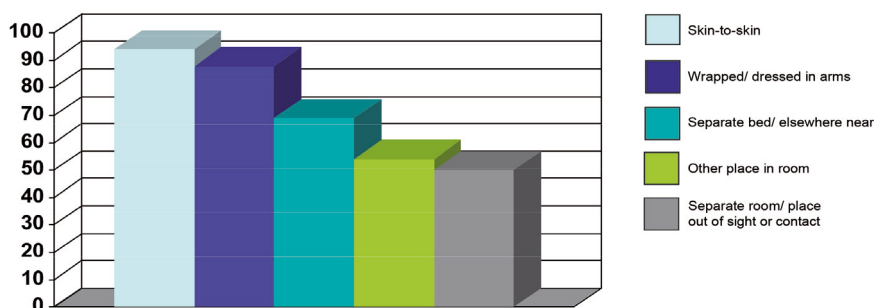


Figure 2: Women's perception of own authority during childbirth by distance to the newborn

Percentage of women with authority within each category of distance to the newborn (n: 217, 3 stillborn infants)

4.3.1 Women's authority during childbirth and the biomedical training of staff

This study attempted to illustrate the impact of biomedical training on women's perceived authority across different levels of care provided for women during childbirth. A graded negative association was found between the perceived authority of the woman and the level of biomedical training of staff (chi-square = 47.146, d.f. = 3, $p < .0001$) (Figure 3). In other words, higher levels of staff training resulted in lowered women's perceptions of their own authority.

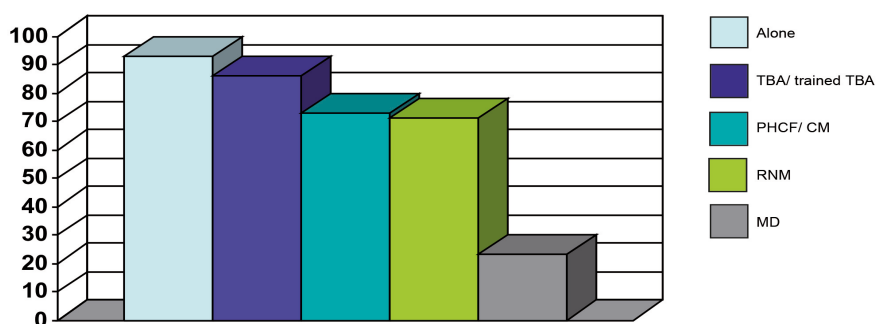


Figure 3: Women's perception of own authority during childbirth by level of biomedical training of staff

Percentage of women with authority during childbirth within each category of delivery staff (n: 220)

Women's age, urban or rural place of residence, number of dependents, literacy and education and occupation and income showed no statistical relationship with women's perceived own authority. Nor did the social status and educational background of the husband play a statistically significant role.

4.3.2 Own authority in context of childbirth location and care

Findings from chi-square analysis showed that women's perceived own authority during childbirth was positively related to whether childbirth had occurred at home versus in a clinic/ health unit or a hospital (chi-square = 99.423, d.f. = 1, $p < .0001$). Consequently, medical interventions showed a strong negative association to perceived own authority (chi-square = 56.49, d.f. 2, $p < .0001$). Birth complications had occurred both during childbirth at home (reported by 25 women, constituting 40% of all women with complications) and in clinics/ health units and hospitals (reported by 37 women, constituting 60% of all women with complications). Birth complications showed a negative relationship with women's perceived own authority (chi-square = 16.553, d.f. = 1, $p < .0001$).

Positive relationships were found with childbirth care-related factors such as the provision of birth support by person/persons other than the midwife (chi-square = 51.703, d.f. = 1, $p < .0001$); the use of an upright versus a semi-upright or lying supine birthing position (chi-square = 19.271, d.f. = 2, $p < .0001$); the experience of receiving answers to one's questions and having one's requests met (chi-square = 128.31, d.f. = 1, $p < .0001$) and being able to keep the newborn skin-to-skin or in arms versus further away (chi-square = 21.868, d.f. = 4, $p < .0002$).

Whether women had been attended during childbirth or not was important for their perceived own authority (chi-square = 7.236, d.f. = 1, $p < .006$). Of the thirty women in the study population who were not attended during childbirth, only two reported lack of own authority.

4.4 THE IMPORTANCE OF OWN CHOICE

The overall aim of this study was to examine the influence of socio-demographic, delivery outcome, and demand factors* (Table 3) on women's preferred location of childbirth in case of a future pregnancy, seen against the background of the previous childbirth.

Overall findings of Article IV

The overriding finding of Article IV was the importance for women of 'own choice' in care seeking during childbirth.

Multiple logistic regression analysis showed that women who had previously been able to follow their own individual choice regarding birth attendance and/ or location of childbirth were six times more likely than other women to plan a future childbirth in the same location (95% CI 2.66 – 19.84).

'Own choice' was one of three variables that showed an independent statistical association with preference for same location in the future. Birth support and birth complications also did: Women who received birth support from person/s in addition to the midwife were four times more likely to plan a future childbirth in the same location (95% CI 1.4 – 18.24) and women who suffered birth complications were 2.5 times less likely than other women to do so (95% CI 1.2 – 10.22).

**Demand factors*

Potential 'demand factors' were discussed in the research group during the pretesting of the questionnaire. It was clear that some aspects of childbirth were central to women's positive experience and evaluation.

Table 3: 'Demand factors': Domains and Questions posed to women

Domain	Question posed
Own authority	"Did you feel that you were the authority at birth? Yes/ No
Birth support	"Were you allowed to have with you the people of your choice? Yes/ no
Proximity to newborn	"Where was the child put immediately within the first few minutes after birth: Skin-to-skin, wrapped/dressed in arms, separate bed/elsewhere near, other place in room but out of contact, separate room/place out of sight"
Own choice	"Did you choose your midwife/ your place of delivery yourself? Yes/ No"

4.4.1 Women's choice of future location of childbirth

Most women who preferred a different location of childbirth in the future were women who experienced birth complications within the frame of institutional care and wanted a future home birth. Of the 148 women with experience of giving birth at home, 140 (95%) stated that they would choose a home birth again while only 46 (69%) of the 67 women with a clinical experience would choose the same location again. Future preference in the clinical group depended greatly on whether childbirth had taken place in a clinic/health unit or in a hospital. Thirteen out of 14 (93%) women who experienced childbirth in a clinic or a health unit would return to the same location, while only 33 out of 53 (62%) women with experience of childbirth in a hospital expressed a wish to return.

4.4.2 Previous childbirth: What mattered to women?

The question put to women, "If you had another baby, would you choose the same place of delivery? Yes/ No", was asked against women's past experience of childbirth taking place at home, in a clinic/health unit or a hospital. Social and demographic factors (including that of antenatal care and distance by walking to location of childbirth) and factors related to childbirth care (including that of 'own choice' of birth attendance/location) – were thus investigated twice.

The question pertaining to women's previous location of childbirth, "Where did you deliver your baby? Home/clinic or health unit/hospital" was used as dependent variable in multiple logistic regression analysis.

Distance by walking to the location of childbirth increased the likelihood of a home birth (OR 1.47, 95% CI 1.41 – 1.52) and so did the presence of birth support person/s (OR 1.36, 95% CI 1.21 – 1.53) and women's own authority during childbirth (OR 1.26, 95% CI 1.12 – 1.42). Women's own choice of birth attendance/location of childbirth (OR 1.14, 95% CI 1.01 – 1.27) and family income from land or cattle increased the likelihood of a home birth (OR 1.14, 95% CI 1.03 – 1.26). Antenatal care decreased the likelihood of it (OR 1.11, 95% CI 1.01 – 1.22).

4.5 ADDITIONAL RESULTS **(Attained after publication of the scientific papers)**

4.5.1 Women in Hadramout (Article I: Fear of childbirth)

Hadramout women in the study population described childbirth very differently from women in the other study governorates. Girls in this part of the country told of different role models with regards to pregnancy, childbirth and motherhood. Mothers and grandmothers were instrumental in transmitting the knowledge, attitudes and practices of this childbirth tradition. The Hadramout Governorate is also the home of a large segment of Yemen's nomadic population, with a distinct childbirth tradition emphasizing non-fear, which, according to Yemeni colleagues, stems from the matriarchal roots of that society.

I present some statistical data from a forthcoming publication in order to further illustrate what seems to be a predominant impact of culture on Yemeni women's reproductive and mental health.

In order to examine the difference in how women experienced fear during childbirth depending on their residence and cultural conditioning, women were divided in three groups: Group 1 consists of all women interviewed outside of Hadramout except the nomadic women; Group 2 consists of non-nomadic women in Hadramout (previously nomadic and now settled as residents); and Group 3 consists of all nomadic women sharing the same culture in whichever governorate (Hadramout, Lahej or Aden) they were found.

Table 4 shows that women in the Hadramout Governorate of Yemen showed considerably less fear of childbirth than women in the other four study governorates and nomadic women by far the least fear (Table 4).

Table 4: Fear and lack of fear of childbirth among women in the study population by cultural influences (n: 220)

	Women with FOC (%)	Women lacking FOC (%)	Totals (%)
Women in non-Hadramout governorates	142 (78)	41 (22)	183 (100)
Non-nomad women in Hadramout	14 (54)	12 (46)	26 (100)
Nomad women in Hadramout, Lahej and Aden	2 (18)	9 (82)	11 (100)
$\chi^2 = 22.803$ (d.f. = 2, p -value = < .0001)			

Table 4 from forthcoming publication "Fear of Childbirth Through the Lens of Culture: Perspectives from the Arabian Peninsula" by Kempe et al

A characteristic of Hadramout childbirth was that it is unassisted. All non-nomad women interviewed (n: 26) and several of the nomad women in Hadramout (n: 4) gave birth unassisted. An attempt was made to examine how the unassisted women of Hadramout differ from the assisted women in the study population. As can be seen in the following table, social and demographic factors such as residency, literacy, education and employment do not differ between the two groups, while health care seeking and reproductive and mental health outcomes do (Table 5). Seven nomad women gave birth with assistance are likely to underestimate differences.

Table 5: Chi-square analysis: How do assisted and unassisted women differ? (n: 220, assisted women n: 190, unassisted women n: 30)

Unassisted women (nomads n: 4, non-nomads n: 26):

- Attend antenatal care less often ($p = .015$)
- Show less fear of childbirth ($p = .004$)
- Perceive more own authority during childbirth ($p = .006$)
- Experience fewer birth complications ($p = .001$)
- Have a shorter length of labour ($p = .013$)
- Bond more closely with the infant ($p = .0001$)
- Have less complications during 40 days postpartum ($p = .03$)
- Have husbands who are more likely to be farmers than government employees ($p = .009$)
- Are more likely to have family income from land or cattle ($p = .003$)
- Have more dependents ($p = .01$)

Socio-demographic variables were non-significant in chi-square analyses comparing the two groups of assisted and unassisted women:

Women's age (< 25 years, 25 – 35 years, > 35 years), Place of residence (Urban/ Rural), Dead children (Yes/ No), Women's ability to read and write (Yes/ No), Women's literacy and education (Illiterate, Reads Quran, Primary School, Intermediary school, Secondary school, Higher education), Women's employment during last 3 months (Yes/ No), Husband's literacy and education (Illiterate, Reads Quran, Primary School, Intermediary school, Secondary school, Higher education), Own choice of location of childbirth and/ or birth attendance (Yes/ No).

Table 5 from forthcoming publication "Fear of Childbirth Through the Lens of Culture: Perspectives from the Arabian Peninsula" by Kempe et al

4.5.2 Women's perceived own authority during childbirth (Article III and IV)

In the bivariate analysis, a number of intra-partum factors were closely associated with women's perceptions of own authority during childbirth. Whether women were attended or not attended, the location of childbirth at home or in an institution, whether birth support was allowed and what birthing position was used all showed a strong statistical association with women's perceived own authority.

Additional bivariate analysis attempted to illustrate the association of some of the above factors with the biomedical training of staff.

The six categories of birth attendants listed in table 2 are divided into the 4-category variable (refer Figure 3) in the following table 6 and table 7: Category 1: TBA, traditionally trained/ TBA, formally trained; 2: PHCF/ CM; 3) RNM; 4: MD.

Birth support showed a graded negative association with the level of biomedical training of staff (chi-square = 97.516, d.f. = 3, $p < .0001$) (Table 6).

Table 6: Support during childbirth by 4-category birth attendance of the most recent childbirth among women in the study population (n: 190)

Birth attendance (category 1-4*):	1 st cat	2 nd cat	3 rd cat	4 th cat
<i>Percentage of women with:</i>				
Birth support	99 %	74 %	48 %	11 %

Birthing position showed a graded negative association with the level of biomedical training of staff, with positions becoming less active the higher the level of training (chi-square = 85.262, d.f. = 6, $p < .0001$) (Table 7).

Table 7: Birthing position used during the last stage of labour by 4-category birth attendance of the most recent childbirth among women in the study population (n: 190)

Birth attendance (category 1-4*):	1 st cat	2 nd cat	3 rd cat	4 th cat
<i>Percentage of women with:</i>				
Upright position (squatting on hands or elbows and knees/ sitting on a birth stool or a helper/ hanging on rope)	52 %	12 %	3 %	3 %
Semi-upright position (lying with the upper part of the body in a nearly upright position)	38 %	30 %	59 %	16 %
Lying position (lying in a supine position)	10 %	58 %	38 %	81 %

Registered Nurse Midwives were the only group of birth attendants who frequently attended childbirth both at home (n: 11) and in an institution (clinic/ health unit n: 9, hospital n: 9) (Table 2).

Bivariate analysis comparing women's perceived own authority during childbirth among these two similar size groups of Registered Nurse Midwives showed a statistical difference in women's assessment of their own authority in favour of the home setting (chi-square = 6.751, d.f. = 1, $p = .001$) (Table 8).

Table 8: Women's perceived own authority during the most recent childbirth by birth attendance in the group Registered Nurse Midwives at home and in an institution (clinic/ health unit or hospital) (n: 29)

	Number of women with childbirth	
	At home (n = 11)	In institution (n = 18)
Perceived own authority		
Yes	11	10
No	0	8

5 DISCUSSION

The aim of this study has been to investigate the views, wants, feelings and behaviour of women with childbirth experience in five governorates of Yemen. In exploring women's own perspectives, it was our ambition to understand how cultural values influence health care seeking as well as women's experience of childbirth care.

To maintain authority during childbirth was important to women and reluctance to give authority over was strong. Findings however showed women's authority and "owning" birth to be decreasing with the biomedical training of staff and the strife to secure skilled care. Women's reproductive health care seeking seen across the time period since interviews were made seems in fact to have changed little in Yemen. A study from the capital of Sana'a (Basaleem, 2012) showed that women's reasoning regarding preferred location of childbirth at home remains, although the use of a skilled birth practitioner at home is more common today.

Women in one of the study governorates, the Hadramout Governorate, described childbirth differently. Hadramout women reported an ability to maintain authority during childbirth and far less fear of childbirth than women elsewhere. This difference between women is believed to stem from the matrilineal traditions prevalent in southeast Yemen, which afford more power and control to women than the patrilineal traditions prevalent in the other governorates. The Hadramout Governorate is also the home of a large segment of Yemen's nomadic population, with a distinct childbirth tradition emphasizing non-fear believed to originate from the matriarchal roots of that society.

Due to the extreme cultural differences between women in Hadramout and elsewhere, I will discuss study findings from Hadramout separately.

5.1 WOMEN'S AUTHORITY DURING CHILDBIRTH: MAINTAINING THE EQUILIBRIUM

Why is women's authority during childbirth important and for whom is it important? Women's low status in the society relates closely to the function of the traditional childbirth sector in terms of how it balances the lack of women's possibilities to exercise authority elsewhere in life (Kempe *et al.* 2010 and 2013). The support of the women's community around childbirth offers a breathing space for women and the childbirth realm has been the nucleus around which support and solidarity among women has grown.

5.1.1 Yemeni women define authority

Women's active participation and sense of authority can look different in different cultures (Davis-Floyd and Sargent, 1997) and can only be defined by the women concerned. Certain key elements were mentioned among the Yemeni women, and they were the same for urban and rural women. Women wanted to be in a position to receive all the emotional and practical support they needed and asked for, to have all their questions answered and their requests met, to be able to freely choose delivery positions and be supported in their choice, as well as to choose the place of delivery. Moreover, they wanted to be in a position to have authority in relation to the husband, both during the actual delivery and in choosing the name of the baby. Rural women also wanted to choose the particular midwife in attendance.

Yemeni women's definition of own authority during childbirth included aspects of perceived safety, support, freedom and rights (Figure 4).

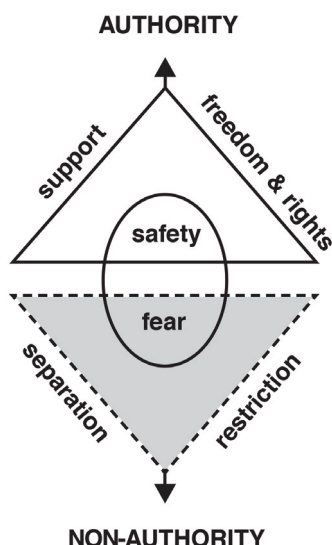


Figure 4: The authority model

5.1.2 The traditional midwife – the key to perceived safety

As soon as the midwife arrived at the door I felt relieved and safe.

Most rural and urban women in the study population have preferred childbirth at home with a traditional midwife, and for essentially the same reasons. They value an unhurried birth, patience on the part of the midwife and conditions that enable them be the authority.

The quality of inter-personal relating during childbirth was found to be of central importance to women. The TBA – or Traditional Midwife, which anthropologists agree (see for example Davis-Floyd, 2018) is really a more appropriate term to describe the long informal training of most of these care-providers and their important roles in their communities – is well known for her skills in this area (Ministry of Public Health, 2000; Soul, 2003).

Comments from Yemeni women, particularly rural women, indicated that they benefit not only from what is done for them during childbirth, or how it is done, but also from the calm reassuring influence of the midwife on them and other women companions as well, through the mere personality of the midwife. The fact that traditional midwives are willing to share their authority with the woman in childbirth, also documented by Jordan (1993) for the Maya midwives of Yucatan, Mexico, as well as with other supporting women seems, in many cases, to be a result of the midwife's own self-confidence. This self-confidence is frequently referred to by Yemeni women as a reason for calling on them, and sometimes exemplified by saying that the midwife can even give birth by herself. That she should be the mother of at least six children was important, indicating the preference among rural women for personal experience above professional training. Another aspect of the traditional midwife commonly referred to by rural women was high ethical standards and the willingness to be there equally

for all women in the community. A sense of fairness and natural empathy were important characteristics for women's trust to be evoked, and possibly, in these midwives, a result of their motivating force to become midwives in the first place (Kempe *et al.* 1994; Soul, 2003). Traditional midwives were often said to practice their occupation on the grounds of having a personal history of difficult childbirth, which was believed by women to be one explanation for the empathy and motivation to help others they so often display (Anderson and Staugaard, 1986; Kempe *et al.* 1994; Soul, 2003). Women recalled how the midwife listened carefully to them and understanding their condition, would not refuse any requests:

I do what I want and I get what I want, my midwife is my friend and she obeys me.

She should be good and respect the others. She should be helpful and humble. She should listen to the complaints of the mother.

A good midwife is one who is well with the people.

Traditional midwifery means status in the community precisely because in the midwife's own eyes, educational status is not important. On the other hand informal status and social capital are important. In this way traditional midwifery differs from the professional status of midwifery and medicine practiced at other levels of society (Davis-Floyd, 2001; Jordan, 1993 and 1997), which usually, as has been demonstrated in this study through women's accounts from the clinics and hospitals, is consistent only with certain social strata in the society, with whom these professions shares values and lifestyles.

5.1.3 Childbirth support: Authoritative knowledge in women's communities

According to Brigitte Jordan, authoritative knowledge can be held by "authorities", by individuals present at the moment, or collectively held by a group. This notion has proven to be a useful theoretical framework for the anthropological analysis of childbirth in various cultures (Davis-Floyd and Sargent, 1997; Pigg, 1997; Sesia, 1997; Bieseke, 1997; Sargent and Bascope, 1997).

In "Authoritative Knowledge and its Construction" (1992) Jordan stated:

...In Yucatan women in the rural communities draw on a large body of wisdom that is assembled in each particular birth from a shared history and from the experience of those present, that is, the woman's immediate family, the village midwife, and other experienced women in the community. What is interesting is that in such situations, all participants lend a hand to give aid – physical, emotional, ritual, spiritual – and if the labour is drawn-out and difficult, they build a shared store of knowledge through stories, demonstrations, and remedies. In this manner, a joint view of what is going on in this labor, with this woman-plus-baby, is constructed in which everybody involved in the birth shares.

Among Yemeni women in the present study, authority is a collective, not primarily individual experience and women's social networks offering mutual support and solidarity are important cornerstones. Social networks are described by Berkman and Krishna (2014) to operate at four different levels: Social support, social influence, social engagement and person-to-person contact. Social support is typically divided into subtypes, which include emotional, instrumental, appraisal and informational support. Support during childbirth among Yemeni women was received in the form of practical help with cooking, boiling of water for the care provider and care of the newborn. Women were generally assisted by a number of people,

both immediate and extended family members and women friends. Traditional ways of caring for the woman in childbirth include abdominal and back massages, the use of special herbs to relax the mother and reading from the Quran. Women emphasized the situation that support from the village women was given as a natural gesture of solidarity:

The friends and the women of our area, they come to support my body, give me drinks if I asked for them and make hot coffee to ease the pains.

They would stand by me, encourage me, tell me that everything will be fine, don't worry. We'll be by your side and you'll deliver safely.

Nobody can say no because she herself needs somebody to help her.

The social and cultural aspects of the production of authoritative knowledge have previously been examined by Davis-Floyd and Sargent (1997). According to Jordan (1993 and 1997) who originally elaborated the concept, the stark contrasts between top-down systems in which the woman herself is granted no authority of knowing, and lateral systems in which authoritative knowledge is communally shared between the woman and her female attendants, make interaction and cooperation between the systems of care important. Midwives working with indigenous women have described how the integration of local knowledge and practice can allow women clients not to be deprived of what, in their view and experience, are valuable tools of resilience (Daviss, 1997).

Findings of the present study must be understood from what they indicate about women's needs to create what they perceive as safety zones for themselves. The strength of these safety zones must be viewed in relation to the perceived threats to these spaces of feminine authority and control. Particularly in the rural areas of Yemen, findings show that the needs for authority and control are strong among childbearing women, and that resistance towards handing over authority, as women define it, is strong. Authoritative knowledge among women in the community evolved as a means of survival, first and foremost a way of providing safety and support during childbirth when access to formal care did not exist. Through practice over time, women were able to perfect those qualities of safety and support within their childbirth practices. When gradually the semi-modern and modern systems of childbirth were introduced, the traditional childbirth sector continued to draw women.

To recap, Kawachi *et al.* (1997, 2004 and 2014) describe the term 'social capital' as including "the features of social organization, such as civic participation, norms of reciprocity, and trust in others, that facilitate cooperation for mutual benefit." Putnam (1993) was the first to introduce the term social capital showing through his research of post-war northern Italy that strong community ties can be a protective force against experienced hardship in communities. Woolcock (2000) further developed the term to look at how social relations could contribute to economic development of in particular low-income countries.

Social capital in the realm of Yemeni childbirth can be thought of as women's own learnt experience of safety and as such, will always be compared to any outside concept of safety introduced. The study in Sana'a in 2010 (Basaleem, 2012) showed childbirth support by family and women friends to be a key reason for women's choice to give birth at home. Privacy was also mentioned, which may indicate the preference of some women to give birth accompanied by a care provider only (Basaleem, 2012).

A recent Cochrane review of 51 studies by Bohren *et al.* published in March 2019 assessed findings of women's perceptions and experiences of companionship, mostly in high-income countries. In spite of both geographical and time distance, the list is almost identical to that of Yemeni women. The spiritual dimension of childbirth was not mentioned in the review but was of paramount importance to Yemeni women. Likewise, the involvement of husbands in

childbirth was very important to Yemeni women, although sometimes at a little more of a distance. The review reported that labour companions played four roles in support of women: Companions provided informational support, through giving information about the process of childbirth, bridging communication gaps between clinical staff and women, acting as an intermediary to communicate between staff and the woman in childbirth, and through facilitating non-pharmacological pain relief. Companions acted as advocates for women. They provided practical support, including encouraging women to mobilise, massage, holding hands. Lastly, companions provided emotional support by helping women to feel in control and confident by using praise and reassurance, and by staying physically present. Compassion and trustworthiness were important qualities of a companion during childbirth and the companionship helped women to a positive childbirth experience. Women in this review had mixed perspectives on having a male partner present.

Early research has demonstrated a strong relationship between a woman's experience of being supported during childbirth and birth complications. Using a sample of 186 geographically, linguistically and historically representative non-industrialized societies, and examining the ethnographic material in 128 of these societies in terms of who was supporting the mother during delivery, it was found that in 127 of 128 societies, a family member or friend, usually a woman, was present with the mother-to-be throughout labour, and in only one society did the mother labour alone (Klaus and Kennell, 1969). In a follow-up research project in Guatemala, it was found that the presence of a supporting laywoman during labour was associated with a greatly reduced incidence of perinatal problems. Of the 427 women chosen and divided into groups with continuous support during labour and delivery or without such support, there was a significantly higher incident of perinatal problems in the control group, which could not be explained by background variables or cervical dilation at the time of admission. There was a higher incidence of caesarean sections and need for pitocin augmentation in the control group. For mothers with normal labour and delivery, labour length was longer in the unsupported group (Klaus and Kennell, 1976).

Wenda Trevathan (1987) postulated that hunting/gathering tribes that developed a birthing support/midwifery system early on in their development had better birth outcome rates and therefore greater chances of the survival and perpetuation of the group. She showed that as humans became upright and walking on two feet, the pelvis had to become narrower to support upright positions. The narrower pelvis necessitated that the larger brained-human fetus had to rotate through the "cardinal movements of labour" to fit through the smaller pelvis, causing human females to experience more pain and difficulties in labour than higher primates with their larger pelvis. "Sexual dimorphism" means that the human female pelvis evolved to be wider than that of the male, allowing space for the baby to rotate and emerge. Yet the greater pain experienced by human females worked to ensure that they would benefit from the psychological and sometimes technical support of birth companions, who could for example release a stuck shoulder or help deliver a baby in the breech position by facilitating delivery of the after-coming head. Thus Trevathan argues that midwifery is likely the world's oldest "profession".

In the Netherlands 2016, the most important items identified by 2192 women with a traumatic birth experience (Hollander *et al.* 2017) were lack and/or loss of control and lack of communication/explanation, listening, emotional and practical support. A conclusion of the study was that supportive interaction around interventions seemed more important than the interventions themselves. All such studies point to the human need for labour support; thus societies in which women birth alone are rare (Davis-Floyd and Sargent, 1987, Cheyney and Davis-Floyd, 2019). Such research also explains why so many Yemeni women prefer home over hospital delivery, as the support they want and need is generally not provided in Yemeni hospitals.

5.1.4 Birthing positions

I can sit or lie the way I like.

.... If I'm tired of leaning or holding onto the bedside, I'll have my sister-in-law in front of me to hold onto. At the same time she assures me that everything is going to be fine, while Amina supports my back waiting for the birth of the baby.

As previously noted, women's birthing position was closely associated with the perception of own authority during childbirth. Women with experience of institutional childbirth, particularly rural women, generally found the delivery position recommended by staff uncomfortable. They reported that they felt restricted and lonely in the lying supine lithotomy position, were unable to receive physical support and unable to see the infant emerging.

It seemed that the women who used the positions of squatting, holding onto a rope, or sometimes, the half upright position, are more aware of what they want and of wanting to be at the centre of their experience on their own terms. Women who use the lying down position seem to have made a more passive choice, and consequently also more than women who chose other delivery positions, these women refer to habit and wanting to conform and "be normal" as their main reasons for choosing or accepting these positions. These are the women, usually in urban areas, who have accepted modern delivery practices.

The doctor said it's comfortable and the operation position.

In the homes of urban women, a compromise was often used in order to allow women to receive the support from others. The semi-sitting position represents this middle ground of midwifery, where the midwife is the authority and leads the birth, but a woman's own participation is also sought.

The third category of birthing positions included a variety of upright positions used primarily by traditional midwives, who seemed free to empower the woman at birth, viewed her as the centre of the childbirth experience and who were perceived by women as equal partners using their authority to support the woman's own process.

I can push with all my power when I'm squatting, and I can see the baby.

It's comfortable, better than what they are doing these days in the hospital, lying as if she is sleeping. How will she have the baby out in this sleeping position?

5.1.5 "The whole is more than all its parts." (Aristotle)

It is clear from looking at the whole section on childbirth, that a delivery position can make a difference in how a woman feels about the birth as one component in a complex situation, revealing how she looks at and allows herself to express her energy and power. The word 'power' was actually used by a number of women in describing their preferences and experiences. Childbirth support was similarly experienced as an intrinsic part of being in authority. Safety to women has meant to develop their own platform. Therefore, when introducing support in a clinical setting, it would be important to not let women feel it be a substitute for their own participation.

My mother and the midwife treated me as if I had the full right to do and to ask for anything.

5.1.6 Yemeni women define non-authority

Urban and rural women defined their experience of non-authority during childbirth as fear, separation and restriction of wants and movement.

Strong words were used by women with experience of institutional childbirth when describing their feelings of frustration and sometimes despair over loneliness, alienation and freezing rooms. Women with experience of childbirth in the presence of a midwife/doctor only described childbirth as fearful and lonely. Helplessness, anger and alienation were common among these women who felt like strangers in the hospital. Some women tried to cope since dependent on hospital staff, others expressed resignation. Care providers' superior attitudes, lack of communication, rude communication and orders which went against women's own instincts, a "voluntary" turnover of control and authority because of knowing institutional regulations in advance, and a lack of authority in relation to the husband were negative experiences in relation to institutional childbirth.

I felt left alone, no one taking care of my feelings, they kept on doing whatever they thought is right.

They kept telling me to bear down when I had no contraction.

He (the husband) is the only one who knows everything, and he does not like women to ask questions.

Women's low estimation of how formally trained staff interacted with them during childbirth is likely to reflect the situation that trained staff often have not experienced the reality of the women who come to them. Practitioner-client hierarchies are likely to be important (Davis-Floyd, 2001; Kaphle, Hancock and Newman, 2013; Peprah *et al.* 2018). Women's lesser experience of communication with formally trained staff may also reflect the fact that hospital staff in Yemen are overburdened. All women had the same experience with formally trained staff, which speaks for unanimous lack of support of women.

Disrespectful intrapartum care during facility-based childbirth has been the subject of systematic reviews by Bohren (2014 and 2015) and by Bradley *et al.* (2016) who collected qualitative data, along with many others. Studies from Ethiopia (Asefa *et al.* 2015) and China (Raven *et al.* 2015) underscore the right of every woman to give birth in a woman-centred environment free from disrespect and abuse and to participate in decision making about the care provided. Women's exposure to violence in health care institutions was subject to a report in the *Lancet* already in 2002 (D'Oliveira, Diniz and Schraiber, 2002).

5.1.7 Facility based childbirth today and yesterday

As previously noted, in the present study when asked whether, in case of a future pregnancy, women would consider giving birth again in the same location (Kempe *et al.* 2011), 95 percent of women with experience of childbirth at home answered the question positively compared with 69 percent of women with experience of institutional childbirth. Future preference in the group of women with experience of institutional childbirth depended to a large degree on whether childbirth took place in a clinic/health unit or in a hospital: 93 percent of women would return to the clinic or health unit compared to 62 percent of women with experience of childbirth in a hospital. Noteworthy is that some women with institutional childbirth had experienced own authority:

I feel that I have full authority, because the midwife replies to my questions, and gives me a drink when I ask for it.

Women participants in the study on reproductive health-seeking behaviour in the capital of Sana'a (Basaleem, 2012) were similarly asked about assistance of a future childbirth. Close to 48 percent of women were considering a relative or friend. Forty-five percent of women expressed their willingness to have skilled birth attendants at home in the future. Table 9 showed – although in a very small study population – that skilled staff works differently at home than they do in a hospital, where they are dependent on superior staff and on hospital regulations (Table 9). More privacy, less cost, bad health facility service, previous home birth and the opportunity to be surrounded by family were given as reasons for the choice of home delivery in the 2012 study.

Globally, most deliveries in developing countries are now taking place in hospitals and clinics (Montagu *et al.* 2017). This recent demographic shift has not led to improvements in outcomes because of continued poor quality care. The challenge today is to integrate into modern midwifery training and care those hard-earned qualities of providing physical and cultural safety and support – women's 'social capital' from past experience of childbirth (Figure 5).



Figure 5: The dual aspects of Safe Motherhood

The leadership of the National Association of Yemeni Midwives (YMA) has a vision for a way of providing women with childbirth care. A maternity home in Sana'a, acting as a referral centre for both hospital- and skilled homebirth, would offer women childbirth options through cooperation with TBAs and the provision of pre- and postnatal rooms to allow for birth support as well as the harmonious establishment of early breastfeeding. To alleviate the high pressure and demand on government hospitals is important alongside the quality of care aspect (Personal communication Fatoom Noor-Aldin Alwazer, Secretary-General YMA).

Women everywhere and especially in Yemen like to be free to choose the place of delivery and I think if the pregnant woman receives regular antenatal care and follow up during pregnancy, she has the right to take the decision for the place of delivery. I am interested in such issues concerning the rights of women in taking their own decision (Personal communication Suad Saleh, Chair YMA).

5.2 WOMEN IN HADRAMOUT

To recap, Hadramout women in the study population described a contrasting outlook on childbirth. Girls in this part of the country were said to be socialized from early childhood into a belief-system of non-fear and have different role models with regards to pregnancy, childbirth and motherhood. Women in Hadramout by far executed more own authority during childbirth than women elsewhere. Mothers and grandmothers were instrumental in transmitting the knowledge, attitudes and practices of this childbirth tradition.

The Hadramout Governorate is also the home of a large segment of Yemen's nomadic population, with a distinct childbirth tradition emphasizing non-fear, which, according to Yemeni team members originating from this part of Yemen, stems from the matriarchal roots of that society.

5.2.1 Risk factors for maternal ill-health – are they different in the Hadramout Governorate?

Information concerning women's health and social status can be found in the Yemen National Demographic Health Surveys. A few of the indicators will be explored here in terms of how they constitute risk factors for childbirth anxiety and fear of childbirth examined in our study and thus explain the differences found between women in different governorates. Data in the YNDHS 2013 does not include the nomad population migrating between the Hadramout and Al-Mahra governorates for reasons of difficulty to ensure a representative sample.

Hadramout and Al-Mahra Governorates show a different profile on most of the indicators in favour of what is known to be beneficial to women's mental health. Hadramout Governorate also shows a different profile on some central indicators constituting risk factors for fear of childbirth. It is likely that the situation that nomad women are not included would further underestimate differences between Hadramout and the rest of Yemen.

Selected indicators presented here are: Child discipline, women's autonomy and polygamous marriages. The comprehensive analysis of these and additional relevant indicators is presented in section 9 (Appendix).

Child discipline

On the theme of *child discipline* the YNDHS report states: "The manner in which parents and caretakers discipline children can have long-term consequences on their physical and psychological development and wellbeing. In an effort to identify the types of child discipline methods used in Yemen, the 2013 YNDHS included questions on this topic."

The following data concern the percentage of children age 2-14 year who experienced child discipline methods during the last month.

- "*Only non-violent discipline*": Hadramout is the governorate where the most children experienced non-violent discipline only and rates one of top three governorates nationally.
- "*Any physical punishment*": Hadramout is the governorate where the lowest proportion of children experienced any physical punishment and rates first nationally.

- *"Severe physical punishment"*: Hadramout is the governorate where the lowest proportion of children experienced severe physical punishment and rates as the best governorate nationally.
- *"Belief in the necessity to physically punish children"*: Hadramout is the second governorate where the fewest respondents believe that a child needs to be physically punished and rates second nationally.

Women's autonomy

In the section on *women's empowerment* in the YNDHS 2013, women's participation in decision-making and problems in accessing health care are discussed.

The following data concern the percentage of currently married women age 15-49 who usually make specific decisions either by themselves or jointly with their husbands, or who reported that they have serious problems in accessing health care for themselves.

"Specific decisions regarding woman's own health care": Hadramout rates next to highest nationally with Sana'a City: only Aden rates higher.

"Getting permission to go for treatment": Hadramout rates first nationally closely followed by Aden.

"Getting money for treatment": Hadramout rates second nationally closely following Aden.

Polygamous marriages

This data concerns percent distribution of currently married women age 15-49 by number of co-wives: Hadramout rates are lowest nationally. There is no consistency with either wealth or education.

FIELDWORK AMONG THE NOMADIC PEOPLE OF SOUTHEASTERN YEMEN: GLIMPSES OF AN INTERVIEW SITUATION

Finding nomad women to be interviewed for the purpose of the study often involved long hours of driving in the desert by the instruction "follow the water".

The following incident was recorded in Sweden with co-author Fatoom Noor-Aldin, who is recapping an interview situation during fieldwork. The interview took place in the rural district of Seyoon in Hadramout with the help of Zeinab Joober Dhman, locally born obstetrician gynaecologist and team member.

The sun was coming down casting long shadows. The three of us had waited long for this interview and in the end she came, our interviewee-to-be, carrying on her head the firewood and all – she was happy, and although carrying a lot – she was not looking tired. 'People are waiting for you', the grandmother called, 'please come and meet them!' We had observed a young infant in a swing made of thick fabric suspended high in a tree. Zeinab asked:

- Is this your child? How do you leave this baby a whole day? Aren't you afraid?
- *What will happen, nothing will happen. All night I'm breastfeeding and in the day I'm looking for other things.*

- How many children do you have?
- *Two daughters.*
- Two daughters, and your husband, is he alive?
- *Yes, he is.*
- Did your husband marry again?
- *Why, I am still alive, how would he marry?*
- He doesn't want a boy?
- *From where would he get a boy?*
- But men can have children...
- *What are you saying, what are you talking about? I am his wife and he won't marry again. If I died - maybe.*

Then I told Zeinab: "Don't plant this idea with them, it may affect them, don't say any more."

5.2.2 Do authority and fear during childbirth have roots in the historical past?

In the book "Why are some people healthy and others not? The Determinants of Health of Populations" edited by Evans, Barer and Marmor (1994), heterogeneities in health status are examined. Time and latency are a foci of investigation in terms of when, during the course of a lifetime or even the lifetimes of parents and grandparents, effects can most accurately be measured as a consequence of earlier prevailing situations, for example in the socioeconomic or medical realm (Hertzman, Frank and Evans, 1994). "All causality unfolds through time, the critical question is, how much time?" the authors ask. For example, the ill-health effects of socioeconomically deprived conditions in infancy in a certain geographical area can be made visible through applying a long enough study period. However, if a similar state of socioeconomic deprivation does not prevail in the special area at present, misinterpretations regarding causality can easily occur.

Four kinds of time are discussed in terms of how they may affect and influence health: elapsed, biological, cumulative and historical time.

5.2.3 Resilient cultures and historical time

In the literature resilient cultures are described as those that have been colonized. Studies have been conducted about indigenous cultures, which have sometimes shown strong resilience in keeping cultural traditions alive (Mohatt *et al.* 2014). Many of these indigenous cultures are in fact matrilineal (Townsend, 2006; Fleming and Ledogar, 2008; Hatala, Desjardins and Bombay, 2016).

Professor Arve Gunnestad (2006) discusses how resilience is generated in early childhood through a child's cultural network. Children acquire role models for positive behaviour from their networks as they identify themselves with the values of the people they love. Meaning, values and faith will have effects as motivational factors for the activities the child involves itself in and hence for the skills the child develops.

Thus, the authoritative knowledge displayed among Yemeni women and on which they derive strength during childbirth goes back a long time – to the experience of seeing, hearing and reflecting on the childbirth experience of mother, even grandmother:

I was afraid during the first pregnancy, but this time I leave everything to God. He is the only one who can help and I think about my mother who gave birth nineteen times and who is still in good health.

5.2.4 Women's authority during childbirth: A mediator between prenatal anxiety and postpartum posttraumatic stress symptoms

A central finding of the present study was that women's perception of own authority during childbirth depended on the ability to bond with the newborn (Figure 2) and a negative trend with the proximity to the newborn was found.

Findings of the recent study by Brandao *et al.* (2018) complement the above in an interesting way. Their study suggested that perceptions of control or mastery during labour can be a pathway between prenatal anxiety and postpartum posttraumatic stress symptoms, which strongly affect early bonding of mother and infant. Women's perceptions of control or mastery during labour thus seem to act as intermediaries for influences into the next generation. This intermediary role of women's perceptions underscores the importance for women particularly in vulnerable situations of experiencing violence or other forms of abuse to maintain authority during childbirth and for staff to find ways to secure such authority for women in the different sectors of childbirth.

5.2.5 What is a culture?

The essence of a culture is the value system by which infants and young children are socialized and conditioned to see and experience the world. The first "home" of a child is his or her mother's womb and the context in which she finds herself.

I was thinking all the time about having a baby girl again, and I felt all the time sad.

I touch my abdomen and talk to myself like a madwoman, and I say: please be a boy, so that your father will be happy and I will be called a mother of boys.

I don't know the word afraid at all. Why should I be afraid of God, I didn't make him angry.

All are children of God.

5.3 METHODOLOGICAL CONSIDERATIONS

The study should be viewed as an attempt to give voice to rural and urban women with childbirth experience from the modern and traditional health care sector in Yemen.

Care has been taken to sample informants for the study to secure the highest possible degree of general applicability of the study findings. Despite the careful sampling procedure applied in the study, it has a number of limitations that could affect the representativeness of the findings.

5.3.1 External validity

The study presents attitudes and views of women with childbirth experience from the five districts in Yemen where Save the Children has supported MCH clinics. These districts represent a wide range of the cultural, ethnic, social and geographic characteristics, which may be identified in Yemen as a whole. An assumption is made that the study findings are generalizable to the majority of women in the selected governorates. No similar study had been conducted previously in Yemen and no sample size calculation was made. We did however rely on work from other low-income settings, primarily Tanzania and Bangladesh, where such calculations had been made preceding similar studies.

5.3.2 Construct validity

Methods of descriptive epidemiology have been employed in this study for the assessment and analysis of health care seeking behaviour. Such methods have limitations when it comes to an identification of attitudes and behaviour. Respondents tend to reveal preferences rather than actual or prospective attitudes and behaviour.

Acknowledging the limitations of the methods of descriptive epidemiology and collection of quantitatively oriented information for the identification of attitudes and behaviour, this study has made use of a combined quantitative-qualitative approach in order to move closer to a "true" picture of the knowledge, attitudes and practices of women in Yemen.

5.3.3 Internal validity

Selection

The study quotes attitudes and views of women with childbirth experience from 11 districts in Yemen. A multistage (stratified-purposive-random) sampling process was used ensuring that the sample obtained was representative of the population to be analysed.

Maturation

The time frame for provision of information from women regarding past health care seeking behaviour as well as experience and impressions from the encounters with modern and traditional MCH-services is the period since the most recent childbirth. This may in some cases appear to be a long period of time and may contribute to a certain degree of information bias in the interview study. However, experience and impressions in relation to childbirth appear to have a lifelong imprint in the minds of women (Simkin, 1992; Davis-Floyd, 2003).

Interviewers

Team members were carefully selected for the study on the basis of educational, social, cultural and personal criteria. Attention was paid to the need for a high degree of cultural similarity between interviewers and informants. The Sudanese team member had lived and worked long in Yemen. Each individual interview session was reviewed and thoroughly discussed between the enumerator and the principal investigator and in the peer group of interviewers. Despite these precautions, a certain degree of interviewer bias is unavoidable in a study like the present.

The vulnerability of interviewed women would affect the interviewers, their views and feelings vis-à-vis the health system and sometimes towards family members of individual respondents. Some of the women's husbands who initially suspected that the study was political sometimes would sit and listen during the initial phase of the interview, mostly leading to the woman's reluctance to speak freely. Once the link to the Health Office had been clarified, these initial problems were usually solved. All women approached for an interview were initially explained about the purpose of the study and asked whether they wanted to participate in it or not. On two occasions in the city of Taiz, male members of the household initially did not allow an interview to take place, and on one of these occasions it was not possible to proceed with an interview until the next day. Such interactions with household members initially created resentment among interviewers, a situation that if not addressed may have led to interviewer bias and expecting preconceived responses. Special measures were taken in the whole group to minimize this effect through giving ample attention to each member of the team in peer debriefing.

The Sudanese team member experienced problems of a specific nature in the city of Taiz. Sudanese midwives had long been involved in the vocational training of Yemeni midwives. In some places this had created resentment. On some occasions, interviewers were asked for official documents showing affiliation to the Health Office in Taiz or asked to explain the aim of the study to members of the household. Again, once the link to the Health Office had been clarified, these initial problems could be solved.

Instrumentation

The questionnaire was developed in a first version by the principal investigator. Based on in depth explorations of themes with team members over the course of two weeks, a few consecutive versions were developed. Pre-testing of the questionnaire took place in urban/rural Taiz. The final version of the questionnaire was translated into Arabic.

Attrition

There were no dropouts in the study. The population in the selected areas, particularly rural areas, is quite stationary. Women on the whole showed a sincere interest in the study and in explanations about its purpose.

Classification

A certain degree of classification bias in the process of elaborating and interpreting the questionnaires is obviously unavoidable, but based on repeated reviews of data this bias has been kept to a minimum.

Care has been taken to minimize the systematic bias related to the documentation of individual responses to questions in the data collection sheets, to the transfer of this information to the computer program and to the analysis of data.

5.3.4 Statistical conclusion validity

The question of whether the study can detect potential differences if they exist depends on ensuring the use of adequate sampling procedures and appropriate statistical tests, to which end care has been taken. A relevant question is whether the study has had sufficient statistical power for detecting crucial relationships. A calculation of statistical power was not made since no similar study had been conducted previously. However, several positive associations were discovered. Due to the limited size of the study population, it is of course possible that some important relationships may have been undiscovered. In addition, it is impossible to state that associations that were undetected do not exist. For instance, it is possible that with much larger samples, socioeconomic relationships might have been discovered.

5.3.5 Qualitative validity

Trustworthiness in this study was ensured by strongly emphasizing credibility, transferability, confirmability and dependability through the use of purposive sampling, member checks in the form of seminars in several geographic areas where the study results were shared among those involved and the participants affirmed that the findings reflected their expressed views, feelings and experiences; prolonged engagement with each interview session lasting for 1-3 hours; external auditing and peer debriefing, whereby an outsider researcher with experience in qualitative research examined the research process. In this process, special attention was given to documents such as transcripts, recorded interviews and handwritten notes. Feedback was provided to enhance accuracy and credibility. Participants gave detailed descriptions of their feelings, actions, experiences and contexts (Lincoln and Guba, 1985).

Special care has been taken by all members of the team to find ways to be a participant observer without disrupting the natural setting of the scene. To not alter the cultural situation during the research process has been important, as has the conviction not to let personal judgments interfere with the data collection or the analysis (Creswell, 2006).

5.4 IMPLICATIONS FOR RESEARCH, POLICY AND PRACTICE

If you want to marry, don't send a bachelor to find your bride. (Yemeni proverb)

The findings from Yemen point to the need for further exploration of local women's perspectives on some long prevailing situations affecting their reproductive health, health care seeking and persisting maternal mortality. Listening to what women say is key. In her comment in the *Lancet* issue on Maternal Health, "Implementation and aspiration gaps: whose view counts?" Lynn Freedman (2016) states:

The true engine of change in maternal health will not be the formal clinical guidelines, polished training curricula, model laws, or patient rights charters we produce. The engine will be the determination of people at the frontlines of health systems – patients, providers, and managers – to find or take the power to transform their own lived reality. Our job in global health is first to listen to them, and then to co-create the conditions at every level of the system that can make that locally driven transformation possible.

5.4.1 Maternal mental health and health care seeking in a sociocultural context

WHO (2014) is proposing a stronger focus on mental health to achieve an integrated delivery of services for maternal and child health. There has been a growing interest concerning the impact of mental, emotional and behavioural health and wellbeing on maternal health outcomes and the growth and development of children (World Health Organization, WHO and United Nations Population Fund, UNFPA, 2008).

In this study on maternal mental health, attention has been given to women's own defined strengths and vulnerabilities during pregnancy and childbirth. The need for authority and the extensive fear that most women reported from the period of the latest pregnancy and childbirth are seen in a context where women are living the consequences of limitations established by society at large. The need to proclaim independence and control in the childbirth realm is seen against the background of limited possibilities elsewhere in life. When possibilities for women become more prevalent, they can experience authority in a greater variety of spheres of life.

Universal primary education for boys and girls will lead to improved gender equality. Girls' education will improve awareness among girls and young women about their reproductive and human rights. Increasing the legal age for marriage will lead to women becoming more equal with their spouses. Decreasing the number of pregnancies and increasing the spacing of pregnancies will mean that more infants survive. Infrastructural development will lead to better access to professional care during pregnancy and childbirth. All of the above will increase women's empowerment during pregnancy and childbirth (Graham *et al.* 2016).

5.4.2 Addressing fear of childbirth

Fear of childbirth has hardly been addressed in low-income countries and there is a need for more research. Fear of childbirth was shown in our study to strongly impact women's mental health and wellbeing during pregnancy, childbirth and beyond. A reduction of the psychological distress during this period of a woman's life will improve the health and wellbeing not only of new mothers but also for children and families (Fisher *et al.* 2012; Kempe *et al.* 2015). Antenatal care has a crucial role in reducing fear of childbirth, especially the fear of institutional childbirth. Finding culturally appropriate arguments to strengthen parents in accepting the equal value of the female child is important to help reduce the emotional distress caused to women by gender preference (Rodrigues *et al.* 2003; Patel and Prince, 2006; El-Gilany and Shady, 2007; Xie *et al.* 2009; Mohammad, Gamble and Creedy, 2011), as is counselling of women and the provision of support during childbirth (Kennell *et al.* 1991). Within the scope of strengthening reproductive mental health programs globally, intervention to reduce fear of childbirth in Yemen and similar settings is urgently needed.

Fear of childbirth is seen in the context of personal, sociocultural and historical factors affecting women, their families and communities (Kempe *et al.* 2013 and 2015). As fear is always a product of the past, there is a need for stretching the time span of this research into past generations and – as has been shown in the present cover story of the study – the history of culture.

5.4.3 Maternal mental health in context of the community

An important and effective avenue for women's empowerment is the dynamic cooperation among women. The involvement of authority, support and solidarity among Yemeni childbearing women is a foundation stone for increased cooperation between the modern and

traditional childbirth sector. Under-utilization of professional care during childbirth in Yemen seems to be, at least partly, an expression of women's inequality and gender segregation. Authority is linked to the fundamental needs and rights of women, as individuals and as a collective, to be recognized and seen as equals (Convention on the Elimination of All Forms of Discrimination Against Women, 1979).

5.4.4 Modifying clinical practice

The integration of childbirth practices from the traditional childbirth realm by building on women's learnt experience in the community is essential. The need to think beyond health services provision by reaching out to people in the community to understand their perceptions, practices and health-seeking behaviours has been emphasized (Shaikh, 2008; Peprah *et al.* 2018; Long and Curry, 1998; Jordan, 1978 and 1993; Davis-Floyd and Sargent 1997; Kaphle, Hancock and Newman, 2013).

There is a need to spread successful models of such integration for adaptation locally. A project in Peru has long applied such an integrative approach (Gabrysch *et al.* 2009); others, such as in Ghana, have demonstrated this intention (Peprah *et al.* 2018) and in a Native American community in Southwest United States (Long and Curry, 1998) and rural Nepal (Kaphle, Hancock and Newman, 2013), the need for an integrative approach to childbirth care has clearly been put forth. The long-term implementation in the poor and isolated communities in Peru of a model of culturally appropriate care during childbirth has convincingly demonstrated that indigenous women with little formal education do use professional delivery services if their needs are met. Lesley Barclay's work (2009) showed that maternal and perinatal mortality was greatly reduced in Samoa when the professional nurse-midwives in charge at the facilities began welcoming, instead of disrespecting, the "bush-midwives" when they transported a labouring woman in distress, and inviting them to stay to support labour support.

The inclusion of TBAs as "doulas" (helpers) in clinical settings (Van Roosmalen *et al.* 2005) has been suggested to offer women adequate emotional support. Apprenticeship of modern staff with TBAs may help to loosen up the hierarchical structures that have proved so detrimental to mutual sharing of knowledge and respect (Afsana and Rashid, 2001; Kyomuhendo, 2003; Anderson and Staugaard, 1986; Peprah *et al.* 2018; Izugbara, Ezeh and Fotso, 2009). The teaching within midwifery and obstetrical training of how to move from a situation where authoritative knowledge is hierarchically distributed into a situation of horizontal distribution of power (Jordan, 1993; Davis-Floyd and Sargent 1997; Izugbara, Ezeh and Fotso, 2009) is essential in order to attract low-income women in Yemen and comparable countries to institutional respectful maternity care.

6 CONCLUSIONS

This study has shown that the issue of safety at birth cannot be addressed separately from the issue of women's influence and authority. Authority to Yemeni women meant being seen and related to as equals, the ability to receive support during childbirth and the freedom of own choice regarding the attendance/location of childbirth as well as the process of childbirth.

No woman should have to choose between a safe delivery and one in which she feels dignified. In whichever setting a woman gives birth, elements of a woman's own authority are important in offering respectful care. This thesis pointed at ways to secure authority on the part of women even in a busy hospital setting. Integration into clinical practice of aspects of traditional care is important. These aspects of care could be regarded as women's 'social capital' in the childbirth realm.

Women's reproductive health care seeking and the preference for home birth seen across a long time period – more than 25 years – seems not to have changed much in Yemen, although the use of a skilled birth attendant at home is more common today. Women's reasoning of late is focusing on the same issues of support and privacy of the home emphasized in the 1990s. These findings have important implications for the global development push toward facility births, when the quality of care in those facilities is poor and does not allow women to have needed support nor own authority.

The second way of looking at results of the study through the window of time was with a much longer time frame in mind. This involved the historical development on the Arabian Peninsula with respect to the status of women and how this seems to influence mental health status and health care seeking during pregnancy and childbirth in the Hadramout study population. Conclusions for this part of the study (thus far, since research is still in process) are:

That women's history – the way of culture – is likely to be an important piece of the picture when considering risk factors for women's mental ill-health and reproductive health care seeking.

Many of the well-known risk factors for women's mental ill-health and fear of childbirth are less prevalent in matrilineal Yemen compared to the other study (and the rest of) the governorates, even if the matrilineal system is not fully practiced today. An overriding observation is that these findings must be seen in the context of the reality of Female Genital Mutilation (FGM), prevalent in both Hadramout and Al-Mahra (not with the Nomadic population), a tradition that negatively influences women's health and wellbeing.

Maternal mental health – including women's perceptions and experience of own authority and fear during pregnancy and childbirth – has everything to do with the status of women, since women are bringing forth the coming generation.

Yemen may provide a unique opportunity to study the influence of gender on health, since the population in the geographical area in question has remained quite stationary.

It is important to hold up models for successful integration of modern and traditional childbirth care. The project in Peru, which has been well evaluated, is an example, and so is Lesley Barclay's work from Samoa. Integration is also a way of making visible the history and collective experience of Yemeni women. Traditional midwives/birth attendants would be properly acknowledged for their contribution to childbirth and the psychosocial wellbeing of women and children and from that platform be encouraged to contribute their expertise in a new way.

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9 APPENDIX

9.1 STUDY OF THE YEMEN NATIONAL DEMOGRAPHIC HEALTH SURVEY (YNDHS) 2013

COMPARING PRE-MATRILINEAL GOVERNORATES WITH OTHER STUDY GOVERNORATES AND THE REST OF YEMEN USING INDICATORS OF THE YNDHS*

With the ambition to examine how daily life of women and their families may differ between matrilineal Hadramout and 1) Sana'a City 2) other governorates of the PhD study and 3) the rest of the governorates in Yemen, specific indicators in the YNDHS 2013** consistent with or similar to the findings of the PhD study were selected.

With each indicator information is given first for Hadramout Governorate. Data for Sana'a City is then given followed by data from the other four study governorates. The data for Sana'a City is added as an illustration of the relationship between the selected indicators and the variables of women's literacy and education as well as the wealth of the household. Women in Yemen's capital city (as well as Aden where women's education has always been promoted) are considerably more educated than in the rest of Yemen and households are more wealthy.

Data for Al-Mhrah, neighbouring governorate to Hadramout, is added for the reason that this governorate too is considered to have had a matrilineal history.

Last the percentage for the whole of Yemen is given for each indicator.

Selected indicators:

Child discipline

Polygamous marriages

Women's empowerment and demographic and health outcomes

Maternal health care

Literacy, education and wealth

* The YNDHS 2013 is the fourth survey of its kind and follows surveys completed in 1991-1992, 1997 and 2003. The survey is nationwide and calls for a nationally representative sample of about 20 000 households. Yemen is divided into 21 governorates and Sana'a, the capital city. The nomadic population migrating between Hadramout, Lahj, Aden and Al-Mhrah is not included in the YNDHS for reasons of logistic difficulties in ensuring a representative sample.

** The YNHDS surveys of 1991-1992, 1997 and 2003 do not allow for comparison with the YNDHS 2013 as participants in the former surveys are geographically sampled in three groups of coastal, mountainous or plateau and desert areas.

9.1.1 CHILD DISCIPLINE

The YNDHS report states: "The manner in which parents and caretakers discipline children can have long-term consequences on their physical and psychological development and wellbeing. In an effort to identify the types of child discipline methods used in Yemen, the 2013 YNDHS included questions on this topic."

Definitions of violence in the YNDHS 2013

1 Only non-violent discipline: “taking away privileges” or “explaining to the child that his/ her behaviour is wrong” and no other form of discipline.

2 Any physical punishment: “hitting the child on the shoulder or spanking on the rear” or “hitting on the rear or at any other place of the child’s body using something such as a belt, hair brush, a stick or something solid” or “hitting the child in the face or head or ear” or “hitting the child’s hand, arm, or leg” or “punishing the child by using a tool and then continued to hit the child very hard.”

3 Severe physical punishments: “hitting the child in the face or head or ear” or “punishing the child by using a tool and then continued to hit the child very hard.”

(Columns 1-3 are based on children age 2-14 years selected for the child discipline module, weighted by the total number of children age 2-14 years in each household where at least one child in this age range is currently living.)

Percentage of children age 2-14 years by child discipline methods experienced during the last one month, Yemen 2013

Percentage of children who experienced only non-violent discipline

Hadramout is the governorate where the most children experienced non-violent discipline only: 29 percent (Sana’a City 18 percent, Aden 15, Lahj 23, Al-Hodiedah 17, Taiz 14). Second place: Al-Mhrah 27 percent. Hadramout rates one of top three governorates nationally. Total: 16 percent.

Percentage of children who experienced any physical punishment

Hadramout is the governorate where least children experienced any physical punishment: 63 percent (Sana’a City 78 percent, Aden 83, Lahj 72, Al-Hodiedah 77, Taiz 83). Second place: Al-Mhrah 66 percent. Hadramout rates first nationally. Total: 79 percent.

Percentage of children who experienced severe physical punishment

Hadramout is the governorate where least children experienced severe physical punishment: 13 percent (Sana’a City 40 percent, Aden 37, Lahj 29, Al-Hodiedah 26, Taiz 48). Second place: Al-Mhrah 21 percent. Hadramout rates first nationally. Total: 42 percent.

Differences in the use of the various types of child discipline by the sex and age of the child and by education of the head of the household are not large. The use of severe physical discipline is more common among rural than urban children and declines steadily as wealth increases.

Attitudes toward physical punishment

Percentage of respondents who believe that physical punishment is needed to bring up, raise, or educate a child properly, Yemen 2013

Percentage of respondents who believe that a child needs to be physically punished

Hadramout is second governorate where the fewest respondents believe that a child needs to be physically punished: 17 percent (Sana’a City 30 percent, Aden 18, Lahj 30, Al-Hodiedah 34, Taiz 46). First place: Al-Mhrah 12 percent. Nationally in Yemen almost four in ten mothers/ caretakers of children believe that children must be physically punished in order to be raised in an appropriate way. Hadramout rates second nationally. Total: 40 percent.

9.1.2 POLYGAMOUS MARRIAGES

Percent distribution of currently married women age 15-49 by number of co-wives, Yemen 2013

Hadramout is the governorate with the lowest rate of polygamous marriages at 3 percent (Sana'a City 7 percent, Aden 4, Lahj 5, Al-Hodiedah 6, Taiz 6). Al-Mhrah 8 percent. Hadramout rates lowest nationally. Total: 6 percent. There is no consistency with either wealth or education.

9.1.3 WOMEN'S EMPOWERMENT AND DEMOGRAPHIC AND HEALTH OUTCOMES

Percent distribution of ever-married women age 15-49 by employment status, Yemen 2013

Hadramout at 7 percent is one of the governorates in Yemen with the least women employed during the last 12 months (Sana'a City 9 percent, Aden 16, Lahj 16, Al-Hodiedah 7, Taiz 10). Al-Mhrah 8 percent. Total: 10 percent.

Women's participation in decision-making

Percentage of currently married women age 15-49 who usually make specific decisions either by themselves or jointly with their husband, Yemen 2013

Specific decisions:

Woman's own health care: Hadramout rates next to highest at 65 percent (Sana'a City same, Aden 81 percent, Lahj 47, Al-Hodiedah 50, Taiz 62). Al-Mhrah 48 percent. Hadramout rates next to highest nationally. Total: 55 percent.

Making major household purchases: Hadramout 50 percent (Sana'a City 61 percent, Aden 64, Lahj 47, Al-Hodiedah 46, Taiz 56). Al-Mhrah 55 percent. Total: 50 percent.

Both decisions: Hadramout rates next to highest at 47 percent (Sana'a City 55 percent, Aden 57, Lahj 43, Al-Hodiedah 41, Taiz 47). Al-Mhrah 35 percent. Hadramout rates next to highest nationally. Total: 42 percent.

Married women in Yemen are roughly about as likely to say that these decisions are made by the husband and wife jointly as to say they are made mainly by the husband alone. Only 8-9 percent of married women say they make these decisions themselves.

Attitude toward wife beating

Percentage of all women age 15-49 who agree that a husband is justified in hitting or beating his wife for specific reasons, Yemen 2013

Husband is justified hitting or beating his wife if she:

Burns the food: Hadramout 5 percent (Sana'a City 2 percent, Aden 4, Lahj 18, Al-Hodiedah 12, Taiz 3). Al-Mhrah with Sana'a City rate first nationally at 2 percent. Total: 10 percent.

Argues with him: Hadramout 17 percent (Sana'a City 5 percent, Aden 13, Lahj 30, Al-Hodiedah 19, Taiz 9). Al-Mhrah rates second nationally at 7 percent. Total: 20 percent.

Goes out without telling him: Hadramout 29 percent (Sana'a City 16 percent, Aden 26, Lahj 47, Al-Hodiedah 30, Taiz 23). Al-Mhrah rates third nationally at 22 percent. Total: 36 percent.

Neglects the children: Hadramout 28 percent, (Sana'a City 14 percent, Aden 22, Lahj 43, Al-Hodiedah 26, Taiz 18). Al-Mhrah rates first nationally at 11 percent. Total: 30 percent.

Refuses to have sexual intercourse with him: Hadramout 26 percent (Sana'a City 18 percent, Aden 21, Lahj 33, Al-Hodiedah 26, Taiz 20). Al-Mhrah rates first nationally at 14 percent. Total: 32 percent.

Half of all women believe that a husband is justified in beating his wife for at least one of the five specified reasons.

Problems in accessing health care

Percentage of women age 15-49 who reported that they have serious problems in accessing health care for themselves when they are sick, by type of problem, Yemen 2013

Getting permission to go for treatment: Hadramout 7 percent (Sana'a City 15 percent, Aden 8, Lahj 28, Al-Hodiedah 53, Taiz 30). Al-Mhrah 17 percent. Hadramout rates first nationally at 7 percent closely followed by Aden. Total: 37 percent.

Getting money for treatment. Hadramout 19 percent (Sana'a City 32 percent, Aden 17 Lahj 51, Al-Hodiedah 69, Taiz 47). Al-Mhrah 27 percent. Hadramout rates first nationally at 19 percent. Total: 57 percent.

9.1.4 MATERNAL HEALTH CARE

Antenatal care

Percent distribution of women age 15-49 who had a live birth in the five years preceding the survey by antenatal care (ANC) provider during pregnancy for the most recent birth and the percentage receiving ANC from a skilled provider for the most recent birth, Yemen 2013

Hadramout at 81 percent follows close to Sana'a City and Aden in ANC utilization by a skilled provider (Sana'a City 84 percent, Aden 88, Lahj 67, Al-Hodiedah 56, Taiz 61). Al-Mhrah 80 percent. Total: 60 percent.

Six in ten women age 15-49 received antenatal care from a skilled provider for their most recent birth as follows: ANC by Doctor or Nurse/ midwife: Hadramout rates high at 72 and 8 percent respectively (Sana'a City 84 and 0.5, Aden 88 and 1, Lahj 60 and 7, Al-Hodiedah 42 and 15, Taiz 60 and 1 respectively). Al-Mhrah 74 and 6 percent.

Place of delivery

Percent distribution of live births in the five years preceding the survey by place of delivery and percentage delivered in a health facility, Yemen 2013

Public sector: Hadramout 51 percent (Sana'a City 31 percent, Aden 53, Lahj 37, Al-Hodiedah 9, Taiz 12). Al-Mhrah at 57 percent rates first place nationally. Total: 19 percent.

Private sector: Hadramout 3 percent (Sana'a City 25 percent, Aden 14, Lahj 4, Al-Hodiedah 9, Taiz 10). Al-Mhrah 3 percent. Total: 11 percent.

Home: Hadramout 45 percent (Sana'a City 43 percent, Aden 31, Lahj 57, Al-Hodiedah 80, Taiz 77). Al-Mhrah 33 percent. Total: 69 percent.

Nationally in Yemen, only 30 percent of births occurred in health facilities.

Assistance during delivery

Percent distribution of live births in the five years preceding the survey by person providing assistance during delivery, percentage of birth assisted by a skilled provider and percentage delivered by caesarean-section, Yemen 2013

Medical Doctor: Hadramout 28 percent (Sana'a City 61 percent, Aden 63, Lahj 30, Al-Hodiedah 12, Taiz 23). Al-Mhrah 37 percent. Total: 26 percent.

Nurse/ Midwife: Hadramout 35 percent (Sana'a City 11 percent, Aden 18, Lahj 20, Al-Hodiedah 34, Taiz 18). Al-Mhrah 27 percent. Hadramout rates second nationally. Total: 18 percent.

Auxiliary nurse/ midwife: Hadramout 3 percent (Sana'a City 3 percent, Aden 3, Lahj 2, Al-Hodiedah 3, Taiz 1). Al-Mhrah 1 percent. Total: 2 percent.

Traditional birth attendant/ Grandmother: Hadramout 6 percent (Sana'a City 3 percent, Aden 9, Lahj 19, Al-Hodiedah 21, Taiz 14). Al-Mhrah together with Sana'a City at 3 percent rate second to last nationally. Total: 12 percent.

Relative/ other: Hadramout 21 percent (Sana'a City 21 percent, Aden 6, Lahj 27, Al-Hodiedah 28, Taiz 43). Al-Mhrah 19 percent. Total: 41 percent.

No one: Hadramout 6 percent (Sana'a City 1 percent, Aden 0, Lahj 0.2, Al-Hodiedah 1, Taiz 1). Al-Mhrah at 9 percent rates first nationally and Hadramout rates second. Total: 2 percent.

Delivery by a skilled provider: Hadramout 65 percent (Sana'a City 75, Aden 84, Lahj 52, Al-Hodiedah 49, Taiz 42). Al-Mhrah 65 percent. Total: 45 percent.

Delivery by caesarian section: Hadramout 7 percent (Sana'a City 13, Aden 12, Lahj 5, Al-Hodiedah 3, Taiz 3). Al-Mhrah 8 percent. Total: 5 percent.

9.1.5 LITERACY, EDUCATION AND WEALTH

Literacy

Percent distribution of all women age 15-49 by percentage literate, Yemen 2013

*Percentage literate**: Hadramout 65 percent (Sana'a City 81, Aden 80, Lahj 55, Al-Hodiedah 42, Taiz 59). Al-Mhrah 54 percent.

*Refers to women who attended grades 6-9, diploma before secondary, secondary school or higher and women who can read a whole sentence or part of a sentence

Educational attainment of the female household population

Percent distribution of the female and male household population age six and over by highest level of schooling attended, Yemen 2013

No education/ Females: Hadramout 37 percent (Sana'a City 24 percent, Aden 23, Lahj 42, Al-Hodiedah 49, Taiz 37). Al-Mhrah 35 percent. Total: 43 percent.

No education/ Males: Hadramout 13 percent (Sana'a City 11 percent, Aden 13, Lahj 18, Al-Hodiedah 28, Taiz 18). Al-Mhrah 20 percent. Total: 21 percent.

Fundamental/ Females*: Hadramout 52 percent (Sana'a City 46 percent, Aden 47, Lahj 43, Al-Hodiedah 41, Taiz 44). Al-Mhrah 52 percent. Total: 45 percent.

Fundamental/ Males*: Hadramout 62 percent (Sana'a City 46 percent, Aden 50, Lahj 54, Al-Hodiedah 57, Taiz 56). Al-Mhrah 63 percent. Total: 55 percent.

Secondary/ Females: Hadramout 8 percent (Sana'a City 18 percent, Aden 16, Lahj 9, Al-Hodiedah 7, Taiz 13). Al-Mhrah 9 percent. Total: 8 percent.

Secondary/ Males: Hadramout 16 percent (Sana'a City 23 percent, Aden 20, Lahj 18, Al-Hodiedah 10, Taiz 16). Al-Mhrah 12 percent. Total: 15 percent.

Higher/ Females: Hadramout 3 percent (Sana'a City 12 percent, Aden 13, Lahj 5, Al-Hodiedah 3, Taiz 5). Al-Mhrah 1 percent. Total: 4 percent.

Higher/ Males: Hadramout 9 percent (Sana'a City 21 percent, Aden 17, Lahj 10, Al-Hodiedah 5, Taiz 10). Al-Mhrah 3 percent. Total: 8 percent.

* Fundamental includes Primary, Unified, Preparatory and Diploma before Secondary

Generally, educational attainment in Yemen is low; only 21 percent of all women age 15-49 have attended at least some secondary school. Thirty-seven percent of women have attended only Fundamental school, and 42 percent have no education.

Wealth quintiles

Percent distribution of the de jure population by wealth quintiles according to governorate, Yemen 2013

Lowest : Hadramout 4 percent (Sana'a City 0 percent, Aden 0, Lahj 20, Al-Hodiedah 33, Taiz 21). Al-Mhrah 6 percent. Total: 20 percent.

Second: Hadramout 8 percent (Sana'a City 0.1 percent, Aden 1, Lahj 20, Al-Hodiedah 25, Taiz 20). Al-Mhrah 2 percent. Total: 20 percent.

Middle: Hadramout 12 percent (Sana'a City 0.2 percent, Aden 2, Lahj 25, Al-Hodiedah 14, Taiz 24). Al-Mhrah 11 percent. Total: 20 percent.

Fourth: Hadramout 45 percent, Sana'a City 26 percent, Aden 25, Lahj 26, Al-Hodiedah 15, Taiz 14). Al-Mhrah 47 percent. Total: 20 percent.

Highest: Hadramout 31 percent, Sana'a City 74 percent, Aden 72, Lahj 10, Al-Hodiedah 14, Taiz 21). Al-Mhrah 34 percent. Total: 20 percent.

9.2 STUDIES IN PROGRESS

Maternal mortality and morbidity with mental health

“Through the Voice of Children: Narratives of third generation survivors of maternal death on the Arabian Peninsula”

A mother’s death affects the survival of children in low-income settings but is also likely to influence developmental outcomes of surviving children. Against the background of the high maternal mortality in Yemen we conducted case studies with children following maternal death. The pilot study on children with a special focus on mental health constitutes part of an ongoing epidemiological study of reproductive and mental health among mothers and daughters in Yemen, initiated in 1996 (pilot) and 1997 (main study) with Yemeni colleagues.

The child study was conducted in the capital of Sana’a with the help of local midwives. Families where maternal deaths occurred within the past year were identified in the existing cohort and the children interviewed individually or with siblings in their new home. The focus of the study was on children’s own narrated experience.

The study was presented at the 10th World Congress on Developmental Origins of Health and Disease (DOHaD), 15-18 October 2017 in Rotterdam, the Netherlands.

Yemeni co-authors are: Fatoom Noor-Aldin Alwazer (National Yemeni Midwives Association), Samera Abdullah Taher (Ministry of Public Health & Population), Fatima Al-Baydhani (Idanoot Foundation for Folklore) and Reem Alsaiidi (Swedish-Yemeni Friendship Association).

Analysis of reproductive and mental health data involving four generations of women (with the latest data collection from 2015) within the forthcoming study **“Mothers, Daughters and Pregnancy Outcome: Generational perspectives on maternal, perinatal and neonatal mortality in Yemen”** involves KI and Aden University researchers.

Childbirth in matrilineal society

Childbirth care

“Midwives in Yemen from Autonomy to Anatomy”

Based on 50 interviews with staff attending childbirth – TBAs/TMs with traditional apprenticeship or formal training, Female Primary Health Care Providers, Community and Senior Community Midwives, Professional Nurse-Midwives and Medical Doctors – an attempt is made to follow the trend of where training takes us in terms of value-systems and corresponding practices.

“Best Criteria For a Good Midwife: Voices of Yemeni women from far off the main road”

Qualitative work based on in-depth interviews contextualizing the perceived needs, preferences and wants of this vulnerable female population.